

Railway Age Gazette

PUBLISHED EVERY FRIDAY AND DAILY EIGHT TIMES IN JUNE BY THE
SIMMONS-BOARDMAN PUBLISHING COMPANY
WOOLWORTH BUILDING, NEW YORK.

CHICAGO: Transportation Bldg. CLEVELAND: Citizens' Bldg.
LONDON: Queen Anne's Chambers, Westminster.

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Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free:

United States and Mexico.....	\$5.00
Canada	6.00
Foreign Countries (excepting daily editions).....	8.00
Single Copies.....	15 cents each

Engineering and Maintenance of Way Edition and four Maintenance of Way Convention daily issues, North America, \$1; foreign, \$2.

Entered at the Post Office at New York, N. Y., as mail matter of the second class.

WE GUARANTEE, that of this issue 8,900 copies were printed; that of these 8,900 copies 7,429 were mailed to regular paid subscribers to the weekly edition, 250 were provided for counter and news companies' sales, 1,099 were mailed to advertisers, exchanges and correspondents, and 122 were provided for samples and office use; that the total copies printed this year to date were \$74,950, an average of 9,374 copies a week.

VOLUME 57

OCTOBER 2, 1914

NUMBER 14

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GENERAL NEWS SECTION

*Illustrated.

One of the most interesting of the discussions which have appeared regarding the Interstate Commerce Commission's decision in the Eastern rate advance case is that by W. M. Acworth, which is published elsewhere in this issue of the *Railway Age Gazette*. Mr. Acworth is well known to American readers as the highest foreign authority on railway affairs in the United States, and, therefore, his criticism of the decision will carry much weight and should be given the most serious consideration by the commission. In our issue of last week we published an editorial expressing the view that the commission

should not deal with railway rates as if it were a court, but should deal with them as an administrative body charged with the duty of solving a great problem of public policy. Mr. Acworth's article was not received until after that editorial was published, and in view of the position he occupies in the railway world, it is highly gratifying to us, and probably is not without significance, that his criticism of the commission's attitude is based on exactly the same ground as ours. We pointed out, and Mr. Acworth now points out in his article, that commissions were created to deal with the problem of railway regulation because the legislatures, and especially the courts, had demonstrated their unfitness to solve it. Mr. Acworth, as he recalls in his article, had accepted the commission scheme of regulation as adopted in the United States with hope and recommended it for imitation in Great Britain, but the attitude assumed by the Interstate Commerce Commission in its opinion in the five per cent case was so different from that which he thinks such a commission should assume to cause him to express apprehension lest regulation by commission may prove a failure because of a disposition on the part of the commissioners to forget that they are not courts.

The propaganda of the automatic train stop makes very slow and halting progress—if, indeed, it is not, a part of the time, moving backwards. Still, "the world do move." The American Railway Association, in its last deliverance, served notice that it would have perfection or nothing.

Activity in Automatic Stops

On the other hand, the railroads of France, prodded by the government, showed, by the papers read at Paris three months ago, that they have pretty definitely committed themselves to the doctrine that the engineman's lookout is not an all-sufficient safeguard against collisions. The Railway Signal Association has dutifully adopted as its own the view of the American Railway Association. But individual roads continue to encourage experimenters here and there. The Horne & Crane speed-control stop (described in *The Signal Engineer* last January) is being exhibited this week on the Central of New Jersey. A prominent western road is going to have installed on its lines one of Dr. Wooding's devices which has been exhibited in Denver, Colo., and in New York City, and also the stop patented by Gollos and tried in October, 1912, on the Chicago Great Western. Some inventors go into eclipse; but others rise; and all seem to have persistent vitality. And, lastly, we have the conservative British Board of Trade coming out on the side of the stop. With its last annual review of train accidents the Board of Trade issues a memorandum, signed by the three inspectors, Colonel von Donop, Major Pringle and Colonel Druitt, in which those collisions of the year which were due to overrunning signals are reviewed, with special reference to their causes; and after some general observations on cab signals and automatic stops, the inspectors say that they "hold that some system of this description should be generally adopted in the future." And they call on the railways to go forward with the experiments necessary to clear up doubtful points. Incidentally, American railway officers will be interested in the Board of Trade's statement, in this review, that track circuits, for locking levers at interlockings, are now in use at 1,500 places in Great Britain.

A little more than a year ago, August 15, 1913, we described the extensive plant for reclaiming scrap which had been established at Corwith, Ill., on the Atchison, Topeka & Santa Fe. It was estimated at that time that half a million dollars' worth of material had been reclaimed for the year ending June 30, 1913. At the time that the article was written it was the most extensive plant of its kind in the country, and possibly still is. Within the last year, however, the Frisco has established a similar plant at Spring-

Frisco Reclamation Plant

field, Mo., which is giving an excellent account of itself, as described in another part of this issue. It is somewhat more compact in arrangement than the plant at Corwith and the buildings are of a more substantial nature, as it was found possible to make use of the shops which were formerly operated by the Kansas City, Fort Scott & Memphis, and which had been practically abandoned by the Frisco. A very noticeable feature about the installation is the neat and orderly way in which the plant is maintained. Of even more importance than this is the thorough check which is being kept on each class of material which is reclaimed, to make sure that the work is being done at a profit and that time and effort are not wasted on useless material. Thus far these two plants have attracted so much attention from other railroads that the practice of installing central reclamation plants may possibly be extended more or less generally to other large roads throughout the country.

The secretary of the Illinois Commercial Men's Association has sent a circular letter to 100,000 traveling salesmen, bitterly

**Protest Against
Advance in
Mileage Rates**

criticizing the steps being taken by the railways to increase the rates on mileage books, and urging the traveling men to protest against the action to the Interstate Commerce Commission. The circular says: "We want you to sign this letter and mail it immediately to the Interstate Commerce Commission, Washington, D. C. We want all the letters to reach them, if possible, at about the same time, so as to make as good an impression as possible (it would be best to write your own letter, wording it as you like, and sending it instead of the copy I am enclosing, but be sure and send in something and do it at once)." Those to whom the letter is addressed are also advised to write letters of protest to their representatives and senators. No exception whatever could be taken if the association should duly appear by proper representatives before the commission and present valid arguments, if there be any, against the proposed advance in rates on mileage books. But can the members of the Illinois Commercial Men's Association themselves indorse the very raw method of agitation suggested by their secretary? The Interstate Commerce Commission, in its opinion in the Eastern rate advance case, protested against the use of alleged improper methods to influence it to decide in favor of higher freight rates. Certainly, neither the railways nor anybody else ever tried to influence it in any coarser, balder or more disreputable way than that outlined by the secretary of this commercial men's organization. If the commercial men carry out their secretary's plan consistency will demand that the commission make a few well-chosen remarks regarding their conduct which will prevent a repetition of it.

THE FREIGHT CAR SURPLUS

THE latest statistical bulletin issued by the Committee on Relations Between Railroads of the American Railway Association, giving the figures for car surpluses and shortages for September 15, affords grounds both for pessimism and for optimism. The business situation, of which it is one of the most valuable indexes, is shown as deplorable, but it is gradually improving. The total surplus on September 15 was 138,108 cars, which is greater than for the corresponding period of any year since 1908, when the total on September 16 reached 175,000. For the corresponding date in recent years it has been as follows: 1907, 17,251; 1908, 173,587; 1909, 78,798; 1910, 54,890; 1911, 70,722; 1912, 27,380, and 1913, 61,753.

The size of the surplus for this year cannot be explained by the fact that there are more freight cars this year than in the past. The car location bulletin of the American Railway Association for September 1, showed a total of 2,408,466 cars owned, as compared with 2,343,091 on September 1, 1913, an increase of 65,375. But cars in shop, while included in figures for cars owned,

are not included in statistics of car surpluses; and in taking the car surplus as an index of business conditions, it must be noted that the number of cars in shop on September 1 was 222,868, or 9.25 per cent of the total, an increase of 42,586 over September 1, 1913, and of these 197,538 were home cars in home shops. As the surplus this year is about 75,000 greater than it was a year ago the number of cars actually in service for which there was no demand was about 117,000 more this year than last year.

The total shortage on September 15 was 2,059 cars, practically negligible, whereas on September 15, 1913, it was 21,594. Although the peak of the demand for cars, according to precedent, will hardly be reached for about a month yet, a study of the current figures gives little indication that the annual predictions of a car shortage, made only a few weeks ago, will be borne out. These predictions, made at a time when the surplus stood at a higher figure than at any time since 1909 (240,000 on July 1) were, of course, based on the unprecedented figures of the government crop reports. Since that time the European war and the failure of the railways to receive a general advance in freight rates has kept general business at a minimum, and cars which otherwise would have been used for merchandise traffic have become available for grain loading, while the grain movement has been delayed by the fact that farmers have been holding their shipments for higher prices.

However, this grain is yet to be moved, and that the situation is improving is shown by the fact that the surplus on September 15 represents a reduction of 27,136 cars since September 1, the largest decrease reported since that for the last two weeks in July. The box car surplus decreased approximately 19,000, practically all in the states west of the Mississippi river and in Canada. This is attributable, of course, to the increase in the grain movement since the lifting of the embargoes on export shipments at the Gulf ports, where thousands of loaded cars stood on the tracks for the last two or three weeks in August. There was also a heavy reduction in the surplus of coal cars in the eastern states, where the total number of surplus cars was reduced one-half, or from 17,262 to 9,522, and the number of surplus coal cars from 11,343 to 5,232.

From March 15 to July 15 there was little change in the total surplus, which varied from 213,324 to 228,384. Since July 15, however, there has been a steady decline, averaging about 10,000 cars a week, or slightly greater than that usually shown for this season of the year.

NEW CLEARING YARD

THE completion of the new transfer yard of the Belt Railway at Chicago marks a significant step in the solution of the problem of handling interchange traffic. The three belt lines around Chicago are well adapted to handle transfer freight between the trunk lines entering the city, and it is probable that if they were used to the best advantage in connection with break-up and classification yards on all the roads well outside the built-up portions of the city, the through freight could be entirely removed from the congested area. This ideal has never been even approximated, partly because many of the roads do not have outer yards and especially because of the lack of co-operation between the roads.

The failure of the first Clearing project, which was promoted by a private company, demonstrated that the provision of ample yard facilities without the co-operative support of the trunk lines will not solve the problem. In the new project greatly improved facilities are provided by a company which is assured the support of the twelve owning roads and which will probably also have the co-operation of a number of non-owning roads having large amounts of transfer business to handle. The result will be closely watched, for if a joint yard on so large a scale can be operated with satisfaction, the plan would have much to recommend it at numerous other transfer points.

The new Clearing yard is conspicuous for its magnitude. It represents an investment of about \$10,000,000. It has the great-

est car standing capacity, the largest number of tracks over a single hump, the largest number of classification tracks leading from a single hump, and therefore the greatest hourly capacity over the hump of any yard in the country. It contains one of the largest push-button electro-pneumatic interlocking installations in the country for operating the switches along the ladders at the receiving ends of the classification yards. It will require an unusual organization for the maintenance of track and for the repairs to cars in the four light repair yards, as well as the heavy repair yard at the adjoining shop.

Aside from the size of the yard, its design has many interesting features. The use of a single hump for classification in both directions has here the advantages of facility of operation due to the ease with which car riders and hump engines can be interchanged, of economy of operation in combining the plant for the mechanical operation of switches at one point, and of relatively low first cost, since the site of the yard is flat and all filling material had to be brought in from a distance. The yard is compact in its arrangement and the layout is such that all cars, except possibly bad order equipment, move through without reversing direction.

The care with which the design was worked out is evidenced by the compensation in the eastbound hump grade for the prevailing winds, which are from the west. As the general direction of the wind is parallel to the axis of the yard, the eastbound hump was made one foot lower than the westbound, and the four per cent accelerating grade in the former case was made eight feet shorter than the other. The car velocity at the foot of the four per cent grade is estimated to be between 12 and 13 miles per hour, which is somewhat higher than usual for similar conditions, but this is offset by the lower rate of grade through the ladders and body tracks of the classification yard. It is expected that changes in the elevation of the hump tracks will be made on account of variations in conditions throughout the year, if necessary. The entire elimination of slip switches in the track layout, the general use of No. 9 turnouts, manganese steel frogs and guard rails and of stone ballast on all important tracks are noteworthy details, all of which will have an important bearing on the maintenance of the yard.

Operating officers recognize that ample standing capacity and proper construction details will not make a yard successful without a well thought out plan of operation and an arrangement of facilities that fits in with this operating plan. So far as it is possible to foresee before the yard is actually operated, the plan proposed for handling cars to and from and through the Clearing yard seems well adapted to conditions. The road engines of owning roads can bring solid trains of transfer cars to the receiving yard and take back solid trains to their lines from the adjacent departure yards, operating over the Belt Railway tracks. This will eliminate entirely the switching charges, and allow these trains to be handled directly from the road's break-up yards to one central classification yard instead of being transferred to the Belt at the junction point for movement by its power to a number of small classification yards, as is done now. By this method a reduction will be effected both in the delay to cars in moving through Chicago and in the cost of transferring such cars between trunk lines. Non-owning roads which so desire can turn over trains of transfer cars to the Belt as at present, paying the standard charge for such transfers, and will gain the advantage of decreased delay which will naturally result from such an improvement in the Belt facilities.

The operation of the yard will be paid for by the owning roads on a car basis, and it is expected that some plan of charging for the use of the portions of the Belt Line over which these roads operate in moving trains to and from the yard will also be worked out on a similar basis. The provision of engine facilities at convenient points to eliminate the delay to road engines, the two approach tracks for each hump track to secure the maximum capacity over the hump, and other features of the yard contributing to the efficiency of its operation are covered in the description published elsewhere in this issue.

THE SIGNAL ENGINEERS' STANDARDS

THE Railway Signal Association deals with vital questions affecting large expenditures. The results of the work of the association have in some cases been realized rather slowly because of ineffective committee work (due largely to the long distances to be traveled and the difficult nature of the problems encountered) and by lack of money; but still, important progress is recorded every year.

These things are called to mind by President Patenall's statement, at the recent annual meeting, that the association's manual of standards now contains drawings dealing with 150 subjects. Every year committees, reporting on their work in connection with standard drawings and uniform specifications, find it necessary to emphasize the need of prompt action, by making the statement that railroad companies are deferring purchases of material or the adoption of improved practice, pending the action of the association in establishing standards. The signal departments of the railways now expend many millions of dollars yearly, and their work deals directly with two vital questions—safety of passengers (and property) and economical use of tracks—and the importance of the points set forth in Mr. Patenall's address cannot be overestimated. These standards affect practice on many thousands of miles of railway.

To the signal engineer, studying the details of his problems, the question of standards presents two difficulties. First, there is the case of materials embodying qualities which are the exclusive property of a single manufacturer by reason of his patent right or secret process. As was pointed out at the meeting last week, there is little of value to the railroads and nothing of credit to the association in making an association standard out of a design or a process which already has a name and a settled reputation. The committees can be employed more usefully in other directions.

Secondly, there is a demand, and perhaps a need, for standards where, possibly, by reason of the complicated nature of the work, the formulation of standards must cost more than the result will be worth. Needs, in such cases, must be forcibly modified to suit conditions. The report of the committee on automatic block signaling brought out this question. In plans for single track operation, the arrangement of the apparatus, and the decision as to how far it is practicable to go in furnishing the refinements which are demanded for theoretically perfect service, involve questions at once so numerous, so perplexing and so costly that the committee found itself unable to make any progress. In this dilemma the sub-committee having the matter in charge took the wise course of laying its case before the association in a minority report. This report commanded the closest attention of every signal engineer in the room. The question whether automatic block signals, with all conceivable refinements, are demanded on single-track railroads is one on which there is still such a variety of sentiment that the throwing of the subject open to general discussion was not only wise but necessary. Not only all signal engineers but all operating officers should take an interest in this broad question. There was a general feeling at Bluff Point that at the next meeting of the association (in Chicago next March) there should be allotted to this subject a whole day.

The minority report presents a circuit plan designed to produce a series of automatic block signals embodying as many electric and mechanical safeguards as are to be found in the controlled manual system when arranged for single track operation.* The authors of the report desire to have all critics make frank comparisons between the merits of this plan and those of the controlled manual system. And as was pointed out at the meeting, there is the further question, constantly before the eyes of the practical railway manager, whether any automatic or unattended block signal apparatus or system whatever, is to be accepted as fully equivalent to a system which, like the controlled

*A single-track controlled manual system was described in the *Railway Age Gazette*, September 11, page 475.

manual, has always on duty the signalman to check possible defects or failures. The theory of the controlled manual system is that both a man and a machine must go wrong before anything can happen with the signals which will endanger a train.

CHICAGO, MILWAUKEE & ST. PAUL

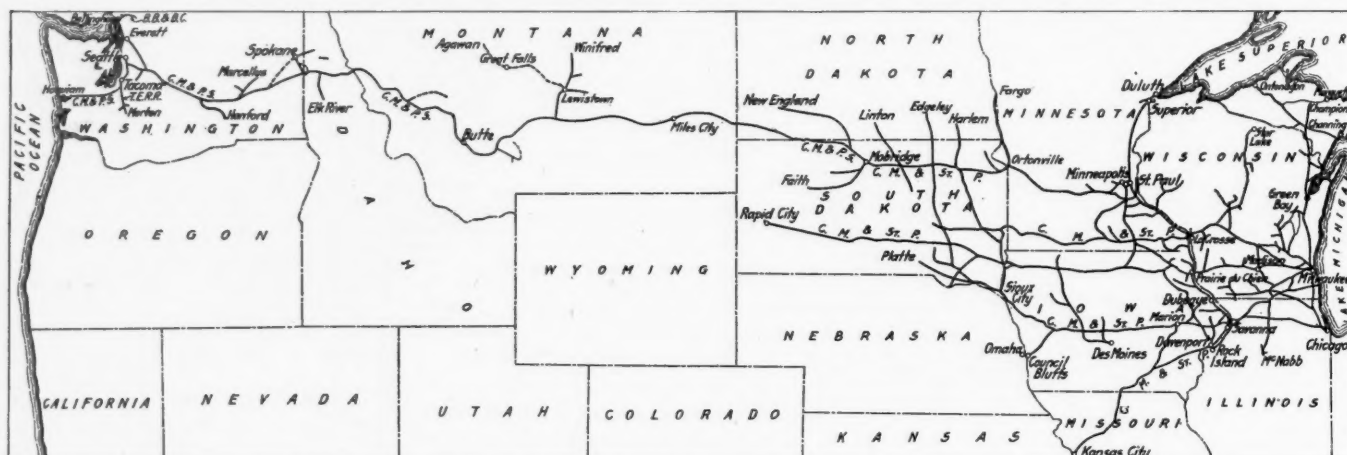
THE St. Paul, in 1914, largely through increasing its freight trainloading, was able in part to offset a loss of \$2,300,000 in operating revenue by a saving in transportation expenses of \$1,100,000. While maintenance of way expenses increased in 1914 over 1913, and may be expected to further increase from year to year for some years as the materials used in the Pacific coast extension require renewal there was a considerably smaller expenditure for maintenance of equipment. The final result was that the company has operating income of \$26,607,000 in 1914 as against \$27,551,000 in 1913.

The Chicago, Milwaukee & St. Paul operates 9,613 miles of road, 73 miles having been added to the average in the fiscal year ended June 30, 1914. This system includes the old Chicago, Milwaukee & St. Paul east of Mobridge, with its mass of branch lines, operating in well-settled territory and with a large passenger business, and the Pacific coast extension, which is largely main line, running from Mobridge, S. D., west through Montana and Washington to Seattle and Tacoma. The first year in which the operations of the Pacific coast extension were combined with those of the old St. Paul, was 1913, and in 1914

The average revenue trainload in 1914 was 380 tons, as against 357 tons in 1913, and the total tonnage, including company freight, was 454 tons in 1914 as against 415 tons in 1913. This gain in trainloading was made despite a smaller carload of revenue tonnage which was barely offset by a larger tonnage of company freight per loaded car, the total tons of freight per loaded car being 19.72 in 1914 and 19.52 in 1913. On the other hand, there were on an average 23 loaded cars per train in 1914 as against 21 in 1913, and 9 empty cars as against 7 in the year before. This made the average freight train nearly four cars, or about 14 per cent longer. The increase in trainload and the decrease in traffic resulted, of course, in a materially smaller mileage run by freight trains. This mileage in 1914 amounted to 19,700,000, and in 1913 to 22,280,000.

Detailed operating expenses reflect quite strikingly this change. Fuel for road locomotives cost \$7,752,000 in 1914 as against \$8,119,000 in 1913, a saving of \$368,000 in this item alone. The saving in wages of road enginemen and road trainmen amounted to more than \$500,000. There was also either a very considerable gain made in the efficiency of yard operation, or else a change in traffic conditions which necessitated less switching, since the wages of yard conductors and brakemen amounted to \$2,075,000 in 1914 as against \$2,177,000 in 1913, and the wages of yard enginemen to \$1,197,000 in 1914 and \$1,288,000 in 1913.

Besides the saving in transportation expenses there was less spent for repairs of locomotives and repairs of freight cars. In



The Chicago, Milwaukee & St. Paul

the details of the consolidation were further carried through, the Chicago, Milwaukee & St. Paul now owning and operating the entire system. The Pacific coast extension has been in operation for about four years. For the first three years of its operation each year, of course, showed very large gains in traffic. In 1914, however, the entire road carried less traffic than in 1913. The St. Paul has a very diversified traffic, 10 per cent of the total tonnage being furnished by bituminous coal, 11 per cent by products of forests other than lumber, 7 per cent by lumber, 5 per cent by wheat, 4 per cent by corn and 17 per cent by manufactures. The total tonnage of products of forests in 1914 was 6,038,000 tons, and in 1913, 6,186,000 tons. The annual report shows a considerably smaller tonnage of lumber, laths and shingles, and a considerably larger tonnage of other forest products. This may, however, be simply a change in classification. There is a falling off in the tonnage of most other commodities with the exception of a considerable gain in the tonnage of stone, sand, etc., which tonnage in 1914 amounted to 2,319,000, and in 1913 to 1,961,000. The gain in this low grade traffic would in some measure help to explain the increase in trainload, but this traffic must, of course, be short-haul business, and therefore although the tonnage is over 7 per cent of the total tonnage, the ton mileage is undoubtedly a very much smaller percentage of the total ton mileage, so that the effect on the average trainload is probably but slight.

1914 repairs of locomotives cost \$5,492,000, or \$218,000 less than in 1913, and repairs of freight cars, \$4,929,000, or \$555,000 less than in 1913.

Apparently, insofar as possible the St. Paul undertook no new work during 1914 and carried on only such work as had already been begun and was uneconomical to discontinue. In 1913 the company spent about \$40,655,000 on new equipment and additions and betterments; in 1914 the company spent \$34,435,000. The principal part of this difference is accounted for by a smaller expenditure for new equipment. In 1913 \$12,415,000 was spent on this account, and in 1914, \$2,979,000, and at the end of the year authority had been given for the purchase of five locomotives and 39 passenger-train cars, while at the end of the previous year authority had been given for the purchase of 41 locomotives, 4,062 box cars and a small number of passenger-train cars. Apparently some of the authorities for new purchases given at the beginning of the year had been withdrawn, since but 33 locomotives were bought during 1914. In 1914 as in 1913 the largest expenditure for additions and betterments, exclusive of equipment, was for second main track, on account of which \$10,573,000 was spent in 1914 and \$12,558,000 in 1913. Construction work planned or under way is mentioned in the construction news columns of this issue.

During the year the St. Paul sold \$17,500,000 general and refunding mortgage 4½ per cent bonds, \$9,741,000 general

mortgage $4\frac{1}{2}$ per cent bonds and \$1,193,900 convertible $4\frac{1}{2}$ per cent bonds. The total amount of bonds outstanding in the hands of the public increased during the year by \$33,753,000. With operating income, therefore, of \$26,607,000 in 1914 as compared with \$27,551,000 in 1913, net corporate income, after the payment of rentals and interest charges, amounted to \$15,476,000 in 1914 as against \$18,141,000 in 1913. At the beginning of the year the company had on hand \$17,361,000 cash, and at the end of the year \$16,746,000. At the beginning of the year there were no loans and bills payable, and total working liabilities amounted to \$10,299,000, while at the end of the year there was \$5,030,000 bills payable, and total working liabilities amounted to \$14,221,000.

As was previously mentioned, the purchase and consolidation of the Pacific coast extension, which had been built by separate companies and consolidated into the Chicago, Milwaukee & Puget Sound, were carried out and \$154,489,500 Puget Sound 4 per cent bonds which were in the St. Paul's treasury were exchanged for a like amount of general and refunding 4's of the St. Paul. The profit and loss account of 1913 shows a charge of \$1,816,000 as adjustment by reason of the acquisition of the property and accounts of the Chicago, Milwaukee & Puget Sound. The 1914 profit and loss account shows a further charge of \$1,144,000. There was nothing on the 1913 balance sheet to show that there would be a still further profit and loss adjustment required, nor is there anything on the 1914 balance sheet to show that any further sums will have to be charged to profit and loss.

In 1914 as in 1913 the St. Paul paid 7 per cent on its \$115,846,000 and 5 per cent on its \$115,941,000 common stock. After the payment of the preferred dividend the company earned in 1914 6.2 per cent on its common stock.

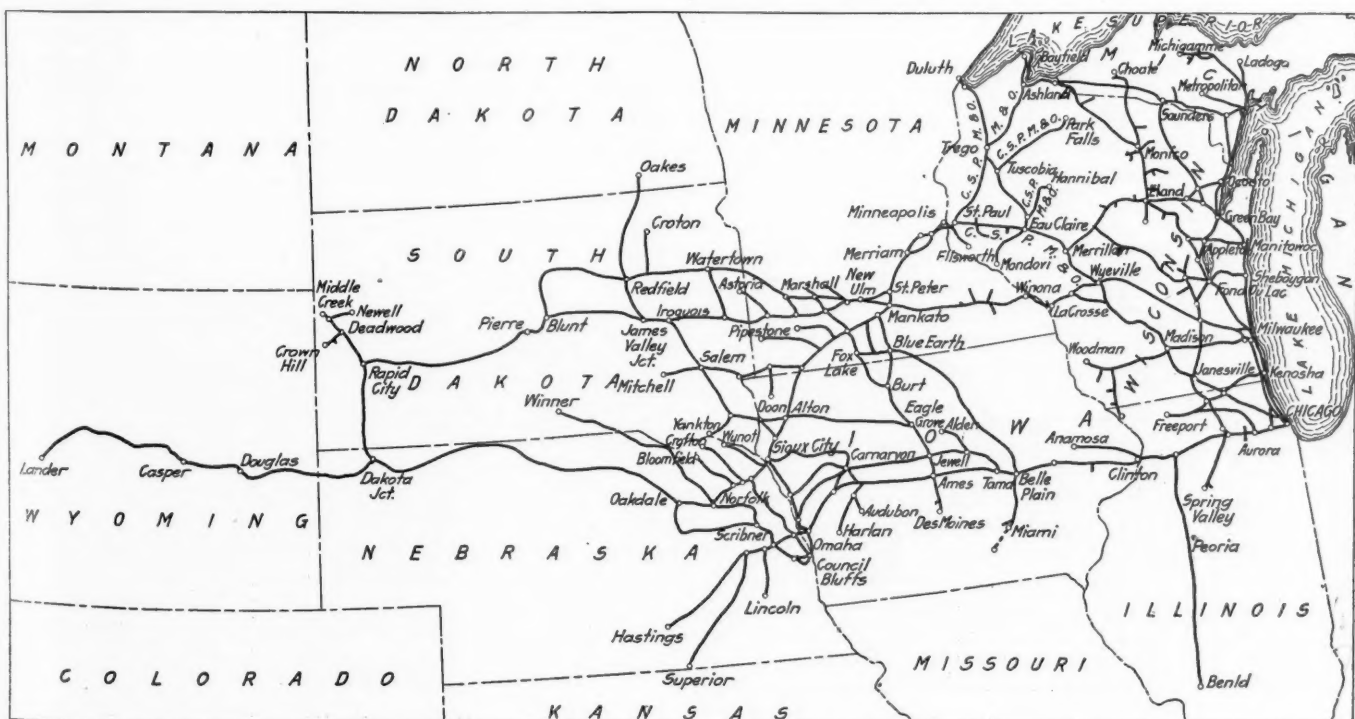
The following table shows the principal figures for operation in 1914 compared with 1913:

	1914	1913
Average mileage operated.....	9,684	9,613
Freight revenue	\$65,266,420	\$67,964,161
Passenger revenue	18,961,225	18,457,136
Total operating revenue.....	91,782,691	94,084,055
Maint. of way and structures.....	10,704,519	10,648,785
Maint. of equipment.....	13,112,978	13,871,985
Traffic expenses	1,799,610	1,894,343
Transportation expenses	33,960,582	35,065,842
General expenses	1,752,573	1,403,012
Total operating expenses.....	61,330,061	62,883,968
Taxes	4,106,557	3,823,833
Operating income	26,606,555	27,551,003
Gross corporate income.....	30,081,656	31,523,542
Net corporate income.....	15,476,286	18,140,745
Dividends	13,928,977	13,912,534
Surplus	1,547,309	4,228,211

CHICAGO & NORTH WESTERN

PASSENGER business is a far more important source of revenue on the Chicago & North Western than on the majority of western railroads. In the fiscal year ended June 30, 1914, although there was a decrease of a little more than 1 per cent in freight revenue as compared with the year before, there was an increase of 4.78 per cent in passenger revenue, with some increase in other transportation revenue, so that total operating revenues amounted to \$83,677,000 as compared with \$83,036,000 in 1913. There was an increase in operating expenses of \$1,152,000, the total in 1914 being \$59,405,000. But the remarkable thing about the North Western's operations in 1914 was that with the substantial increase in passenger business on a road where nearly a third of the revenue is derived from the operation of passenger trains, there was a decrease in transportation expenses. In recent years it has been the almost universal rule for any increase in passenger revenue to be accompanied by a disproportionately large increase in passenger train mileage, with, of course, a corresponding increase in transportation expenses. On the North Western in 1914 the passenger mileage increased 5.35 per cent, and the mileage of revenue passenger and mixed trains but 0.74 per cent; in other words, the average number of passengers per train-mile increased from 52 to 54.5. With a decrease of 0.84 per cent in ton mileage there was a decrease of 0.74 per cent in freight and mixed train mileage. It will be seen, therefore, that the total train mileage was less in 1914 than in 1913 by only a small fraction of 1 per cent.

The total wages paid by the North Western amounted to \$33,871,000. This is an increase over 1913 of \$959,000, of which little more than half was due to higher rates paid, and a little less than half to increased time worked. With almost no reduction in train mileage and with some increases in wage scales it is evident that the decrease in transportation expenses must have come about from economy in the use of fuel or other materials. As a matter of fact, the economy was in the expenses for fuel. Fuel for yard locomotives cost \$1,126,000 in 1914, a decrease of \$267,000, and fuel for road locomotives cost \$6,047,000, a decrease of almost \$800,000, so that the reduction in transportation expenses would have been even greater than it was if it had not been for increases in wages of station employees, the total increase being \$152,000, and increases in amounts paid for loss and damage to freight and injuries to persons, the increases being \$222,000 and \$223,000 respectively.



The Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha

An increase in the wages of station employees is one of the few increased expenses which railroad security holders ought to be willing to cheerfully meet. Station employees are one of the very few classes of railway labor which are now underpaid.

A part of the saving in fuel is probably due to the use of heavier engines; but there is another factor which is very important in this fuel saving, that is, the opening of the St. Louis, Peoria & North Western, which was built for the Chicago & North Western from Peoria into the Illinois coal fields where the North Western owns mines. Previous to the fall of 1913 fuel coal from these mines was carried by foreign roads and the cost of fuel included, of course, the foreign roads' freight charges. Since the company has its own line the cost to the North Western of the transportation of the coal from the mines to the point of delivery has undoubtedly been very much cut down. If a considerable part of this fuel is hauled in regular revenue trains it may be that the company is charging against the cost of fuel a very small part of the train expenses; but if this is the case there have been economies in other ways in transportation expenses to offset it, since the final point is that the North Western is getting its fuel delivered with a much smaller charge against the fuel and no increase in other transportation expenses which would be caused by the North Western's doing the hauling of the coal instead of some foreign line.

In 1914 the North Western spent substantially larger sums for maintenance of both roadway and equipment than in 1913, the principal increases in roadway being for ties, rails, and roadway and track labor. In respect to ties especially considerably more replacement work was done in 1914 than in 1913. The total spent on this account last year was \$1,762,000, or \$364,000 more than in the previous year, and 3,042,000 new ties were put in track as against 2,718,000 in 1913. In maintenance of equipment the principal increases were due to a considerably larger amount being spent for repairs of freight cars—\$4,271,000 in 1914 as against \$3,956,000 in 1913—and apparently a more liberal policy in charges for depreciation, although the increased depreciation charges may be entirely accounted for by the larger amount of equipment in service at the end of the year than at the beginning—1,830 locomotives as against 1,722, 1,918 passenger cars as against 1,796, and 65,950 freight cars as against 61,263.

Besides making larger expenditures for maintenance the North Western spent \$12,912,000 for additions and betterments and additional new equipment in 1914, which compares with \$7,832,000 spent on property account in 1913. The company also took over the St. Louis, Peoria & North Western, as mentioned above, a 115-mile road from near Peoria to the coal fields in Macoupin county, Ill. The cost of this road to the North Western in 1914 was \$9,897,000, and in addition the North Western guaranteed \$10,000,000 first mortgage 5 per cent bonds of this company, which bonds were issued to the North Western by the construction company to reimburse the North Western for its advances. These bonds were, of course, sold by the North Western.

At the end of the year the Chicago & North Western had \$19,459,000 cash as against \$9,647,000 at the beginning of the year, and total working liabilities amounted to \$9,079,000 at the end of the year, as against \$10,420,000 at the beginning of the year. The principal reduction in working liabilities was in audited vouchers and wages unpaid, which amounted at the beginning of the year to \$5,245,000, and at the end of the year to \$3,924,000. This decrease is presumably indicative of greater efficiency and economy in the accounting department, in fact the whole report reflects remarkable gains in good railroading on a road that was already one of the best run in the country.

The table shows the principal figureys for 1914 and 1913.

	1914	1913
Average mileage operated.....	8,071	7,974
Freight revenue	\$53,989,475	\$54,661,588
Passenger revenue	21,540,543	20,557,623
Total operating revenues.....	83,677,051	83,035,921
Maint. of way and structures.....	12,179,690	11,501,186
Maint. of equipment.....	12,187,123	11,568,496
Traffic expenses	1,357,643	1,348,982
Transportation expenses	31,941,194	32,241,258
General expenses	1,739,491	1,592,858
Total operating expenses.....	59,405,142	58,252,780
Taxes	4,252,790	3,597,160

Operating income	20,004,969	21,197,277
Gross income	22,925,730	24,660,796
Net income	12,306,142	14,875,013
Dividends*	11,099,606	11,100,088
Surplus	3,775,408	1,206,055

*Includes \$200,473 in 1914 and \$199,991 in 1913 appropriated to sinking funds.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA

THE Chicago, St. Paul, Minneapolis & Omaha is a subsidiary of the Chicago & North Western. It operates 1,748 miles of road, much of which might be called branch line mileage in an agricultural territory. In the fiscal year ended June 30, 1914, the road carried 2.47 per cent more ton mileage and 13.70 per cent more passenger mileage—the freight revenue being greater by 5.25 per cent and the passenger revenue by 8.65 per cent than in 1913—but after the payment of dividends, showed a slight deficit, \$65,000, as against a small surplus, \$192,000, the year before. The principal factors in this showing of a deficit as against a surplus with considerably larger business were the expenditure of \$404,000 more on maintenance of way and structures, the total in 1914 being \$2,613,000, and an increase in taxes of \$141,000. The increase in taxes was out of all proportion to the increase in business and the amount of earnings that are required for taxes on the Omaha is out of all proportion to its earnings or its mileage. In 1914 5.41 per cent of total operating revenue was consumed by taxes, the total amount paid being \$973,000. The increase in maintenance of way expenditures was the result of extraordinarily large appropriations for ties and a considerably larger amount spent for bridges, trestles and culverts and for track labor. The table at the end of these remarks shows the comparison between the income accounts for 1914 and 1913.

Transportation expenses in 1914 amounted to \$6,940,000, an increase of but \$193,000 over 1913, the largest single item of increase being that for injuries to persons, on which there was spent \$312,000 in 1914 as against \$180,000 the year before. The fact that this subsidiary of the North Western as well as the North Western itself showed very considerably heavier charges for injuries to persons in 1914 suggests that probably the company is settling new claims more promptly and is cleaning up old claims. Eliminating this increase of \$132,000 for injuries to persons, transportation expenses increased but \$63,000, or less than 1 per cent. The total number of tons carried amounted to 8,467,000, an increase of 3.18 per cent over the previous year, and the passengers carried 4,882,000, or 8.47 per cent over the previous year. This is a good showing.

The average revenue trainload increased by 11 per cent, being 307 tons, and the lading per loaded car, 1.26 per cent, the total being 19.23 tons in 1914. The gross earnings per ton-mile were 8.8 mills in 1914, a decrease of 2.33 per cent. The average haul for freight was 153 miles in 1914 and 154 miles in 1913. On the other hand, the average passenger journey was 54.63 miles in 1914 and 52.11 miles in 1913, an increase of 4.84 per cent.

In 1914 a total of \$2,097,000 was spent for property account, of which \$939,000 was for extensions or additions and betterments, and the remainder, \$589,000 net, for new equipment. The company sold \$1,700,000 debenture bonds of 1930, and at the end of the year had on hand \$1,016,000 cash, as compared with \$2,413,000 at the beginning of the year. Total working liabilities amounted to \$1,939,000 as against \$2,771,000 at the beginning of the year.

The following table shows the principal figures for operation in 1914 as compared with 1913:

	1914	1913
Average mileage operated.....	1,748	1,747
Freight revenue	\$11,427,563	\$10,857,207
Passenger revenue	5,415,710	4,984,595
Total operating revenue.....	17,992,371	16,993,005
Maint. of way and structures.....	2,612,610	2,208,294
Maint. of equipment.....	2,283,926	2,188,946
Traffic expenses	353,956	348,515
Transportation expenses	6,939,604	6,746,792
General expenses	442,474	394,915
Total operating expenses.....	12,632,571	11,887,461
Taxes	973,283	832,263
Operating income	4,402,684	4,268,469
Gross income	4,636,089	4,504,272
Net income	2,021,615	2,278,933
Dividends	2,086,910	2,086,910
Surplus	65,295*	192,023

*Deficit.

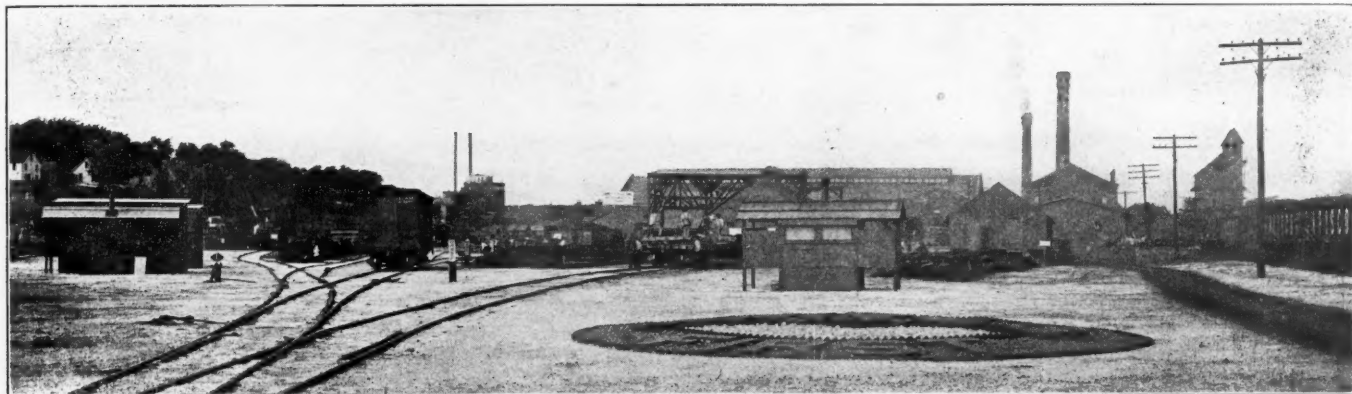
Reclaiming Material on the St. Louis & San Francisco

The Extensive Plant Established at Springfield (Mo.) for This Purpose Is Developing Surprising Results

The reclamation plant of the St. Louis & San Francisco, established at Springfield (Mo.) a little less than a year ago, has many features of special interest. In the first place, it is housed in what might be termed "scrap buildings on scrap property." This, however, is not nearly as bad as it sounds for the buildings, at least the two main ones, are of substantial construction and were originally built as the main shops of the Kansas City, Fort Scott & Memphis, but were practically abandoned when the new Frisco shops were built on the other side of the town several years ago. The plant is

ticularly in a plant of this kind, cannot but be felt in the results which are obtained from its operation as a whole.

The scrap which is collected from the various divisions and shops is delivered to the reclamation plant at the rate of about 4,000 tons a month. The force required for handling and sorting it and carrying on the work of reclamation consists of about 255 employees. These are in direct charge of a superintendent, who reports direct to the chief purchasing officer, and include a general foreman, a dock foreman, an office staff of six men, a machine shop and air room force of



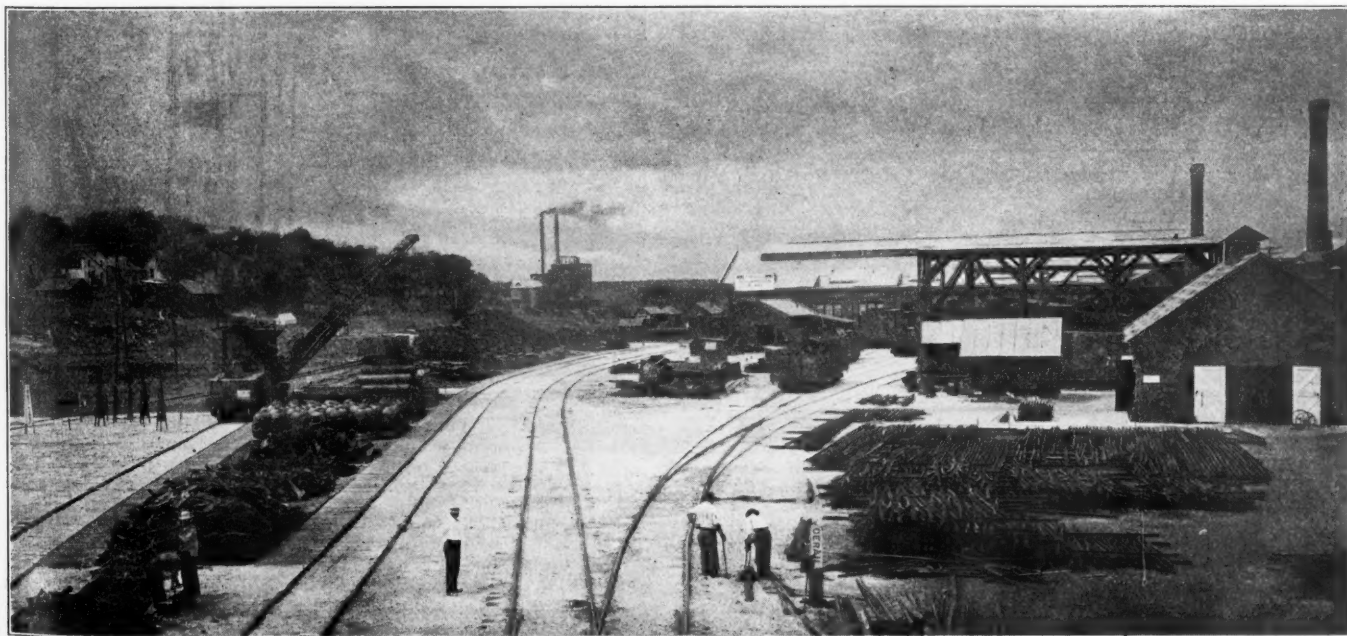
A General View of the Reclamation Plant of the St. Louis & San Francisco at Springfield (Mo.)

located about one-quarter mile south of the passenger station at Springfield. That part of the yard which is used for the unloading and storage of scrap formerly consisted in large part of the low, uneven and eroded slope of a creek. This has been leveled and filled except for the channel bed and serves its purpose admirably, as indicated in the general views of the plant.

The buildings are kept well painted and a more or less successful attempt has been made to keep the plant in a neat and orderly condition. From the very nature of things this is a difficult task, but the moral effect upon the force, par-

15 men; 14 men in the bolt shop, 37 in the blacksmith shop, five in the track material and frog shop, 14 in the carpenter shop, eight in the Oxweld department and about 150 in the miscellaneous force.

As the cars containing scrap arrive they are unloaded by a Brown hoist equipped with an electric magnet. The sorting is done by small gangs of men under the supervision of a foreman who thoroughly understands material. A large part of the scrap is of no use as far as re-application to cars and locomotives or roadway is concerned and this is merely sorted into piles according to the class and grade and is



General View of Scrap Yard and Reclamation Plant

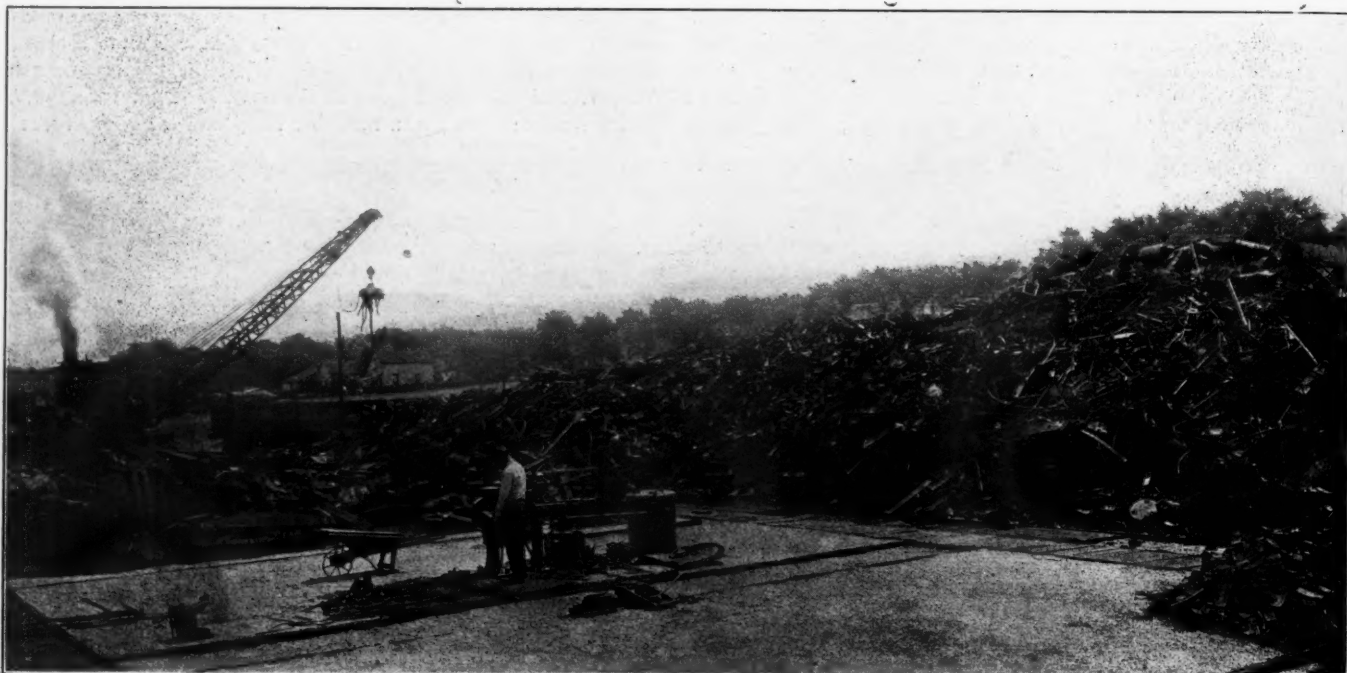
again loaded on cars by the hoist and shipped and sold to scrap dealers. The remainder, possibly from 20 to 25 per cent of the total, furnishes the basis of the reclamation plant's profitable operation.

In developing this work of reclamation, it was recognized that it might easily be overdone and thus neutralize all of the gain which could be made if the efforts were concentrated on that part which might be reclaimed with profit. To guard against mistakes of this kind each item is carefully studied and analyzed and where there is any question as to the

which house the machinery are located at one end of the scrap yard. The other smaller buildings, which have been constructed at a comparatively small cost from scrap lumber and old metal car roofs, are so located as to facilitate the movement of the various classes of material which they handle, cutting down lost motion and wasteful moves to a minimum.

BOLT AND NUTS

All the bolts which are sorted from the scrap are sent to one of the smaller buildings, which is equipped with a shear



Unloading Scrap With a Three-Ton Hoist Equipped With an Electric Magnet

strength or durability of the part for the purpose for which it is intended, efforts are made to follow it into service. As all of the reclaimed metal parts are dipped in an asphaltum mixture before they are sent to the shops and storehouses, it is easy to spot them in the storehouse stock and to recog-

and three small air operated hammers. The damaged ends are cut off and the bolts are straightened under the hammers. They are then sorted by diameters and lengths and are sent to the machine shop, where they are re-threaded. There is provided for this purpose one single-head bolt cutter, three



A Group of Bolt Cutters in the Machine Shop

nize them when they are replaced on cars and locomotives. It is thus possible to more or less readily locate any breakage or failure on a large scale of parts which have passed through the reclamation plant. The mechanical department officers are constantly on the lookout for possible cases of this kind.

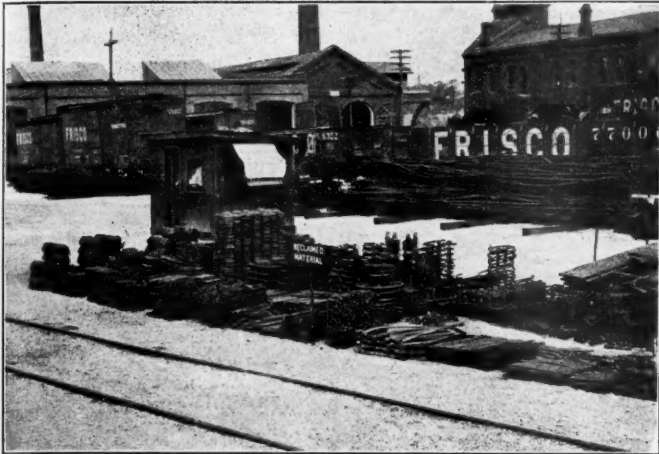
As may be seen from the photographs, the main buildings



Two of the Multiple-Spindle Nut Tappers Which Were Reclaimed from Scrap

double-head machines and one triple-head machine. The scrap nuts are first annealed and are then placed in a rattler and cleaned; they are then sorted in sizes and retapped on four tapping machines, each of which is equipped with seven spindles. In all cases nuts are screwed on the newly threaded

bolts before they are sent to the storehouse. It is true that before the establishment of the reclamation plant, many of these bolts and nuts were reclaimed. It was a more expensive process, however, because the machines were scattered at the different shops and were not worked as efficiently as is pos-



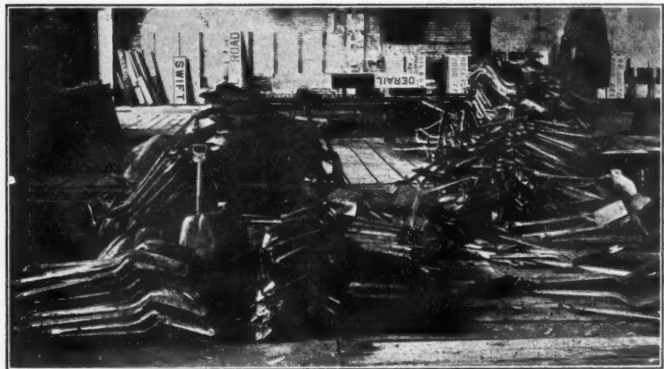
Good Material Which Has Been Picked from Scrap for Future Use

sible where they are grouped together in one department and have a sufficient amount of work to keep them working to capacity at all times. In all cases it has been found possible to speed up the machines and thus increase the output. Practically all of the work in the reclamation plant is done on a piece work basis.

A large number of new bolts and pins are also made from round iron which is taken from the scrap, straightened and cut to proper lengths. For the heading of these bolts two machines are used which were reclaimed from scrap. Practically all of

AIR BRAKES AND AIR HOSE

The main building, which contains the machine shop and the bolt and nut machinery, also has a section for repairing and cleaning air brake apparatus and for working over air and steam hose. The hose and fittings are first stripped with home-made devices; about 90 per cent of the fittings are practically as good as new when they have been cleaned and new gaskets have been applied. The greater part of the hose is useless, although a certain proportion of it is fit for splicing and using on work equipment or for working over for dummy



A File of Shovels with Broken Handles and Bent Blades is Shown at the Right and a Number of Repaired Shovels at the Left

hose. In one month, for instance, 230 steam heat hose were overhauled, the old fittings being applied to new hose in most cases. In the same way 2,505 air hose were overhauled, 706 air hose were spliced and 53 dummy hose were fitted up.

In this department triple valves, angle cocks, relief valves and various other pipe and air fittings are overhauled and placed in a serviceable condition, often at a comparatively



Reclamation Plant Machine Shop

the bolts which are required on the railroad are now being reclaimed or made at the reclamation plant. During one month 157,082 machine bolts were reclaimed or made from scrap or new material at an estimated saving of \$1,953.50 as compared to the value of new bolts. This is on the basis of direct labor and material cost, plus a proper allowance for supervision and overhead expense.

small expense. A typical month shows the overhauling and reclaiming of 247 angle cocks, 29 cut-out cocks, and 283 globe valves.

A large portion of this same building is used for the repairing of damaged lanterns, markers, gage lamps, classification lamps, switch lamps, oil cans and other locomotive supplies. The item of locomotive supplies will probably not

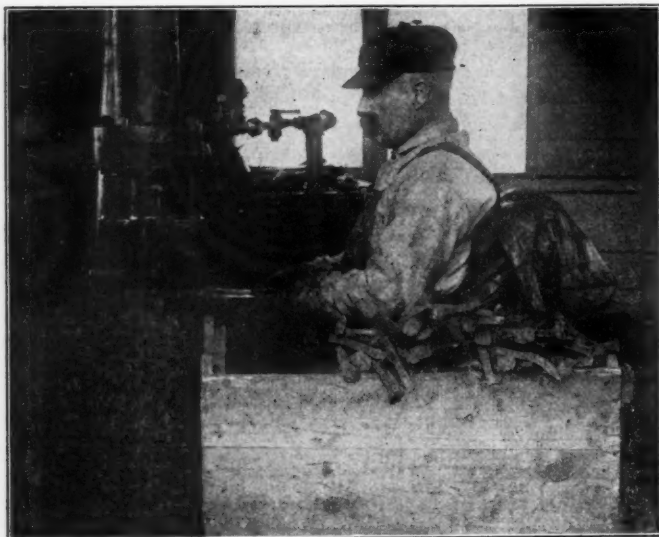
amount to a very large factor, however, because of the steps which are being taken by the mechanical department to standardize and give special attention to the proper use and maintenance of this material, as will be described in a later article of this series.

ROADWAY MATERIAL

A large part of the main shop is used for the rebuilding of damaged hand and push cars which are picked up and sent

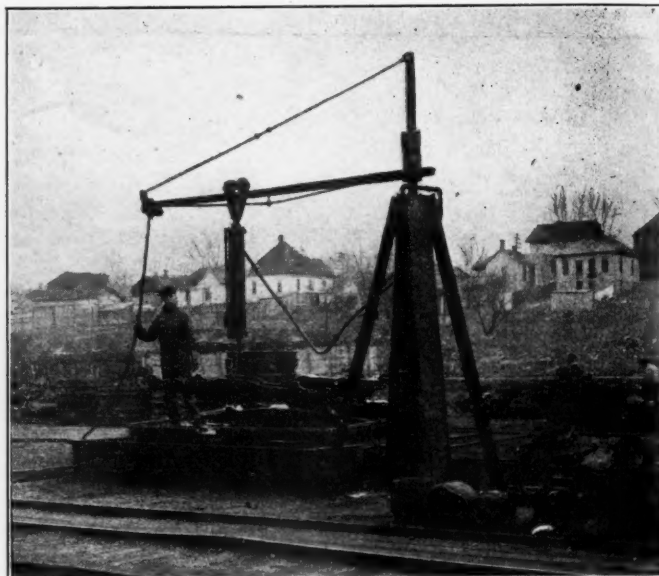
trucks, track drills, jacks, track levels and station skids. As an example, one month showed the reclaiming of 23 track jacks, 45 hand cars, 6 baggage wagons, 48 warehouse trucks, 8 push cars, and 5 station settees, with an estimated saving of approximately \$1,000.

Another part of the shop, which is of more than ordinary interest, is that in which the shovels, scoops and scythes are re-handled and straightened up. This portion of the shop



Pneumatic Spike Straightening Machine

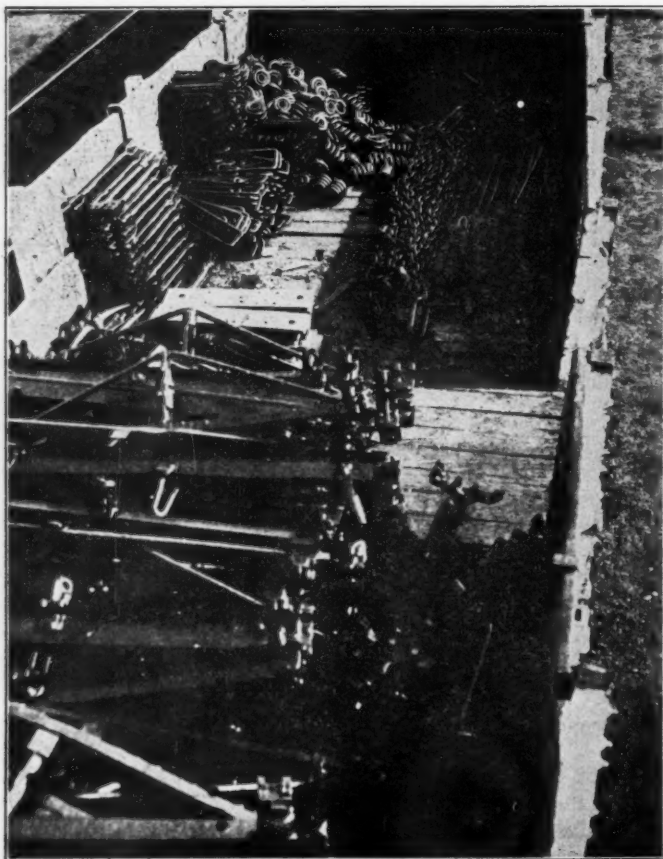
to the reclamation plant as scrap. In some cases where the cars are badly damaged it may require the good parts from two or three cars to make a new car. When this has been done and the car has been properly painted it is usually difficult to tell it from a new car. This is also true of baggage



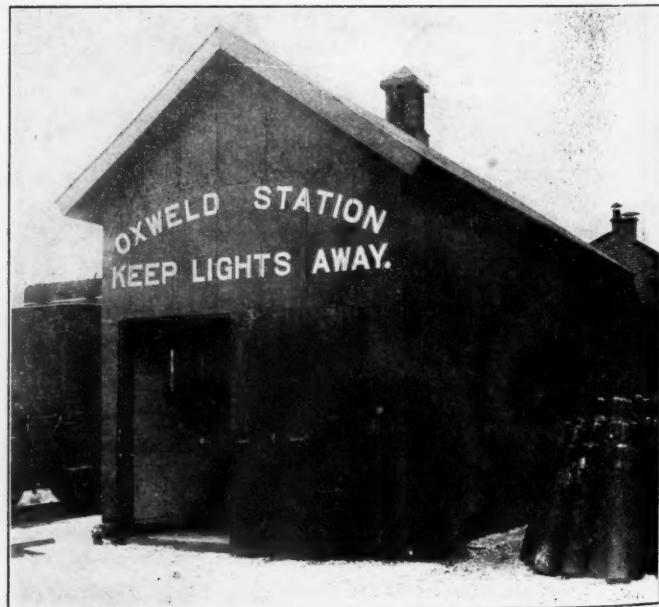
Crane and Vat for Immersing Reclaimed Material in Mixture of Asphaltum

is shown in one of the photographs. The 12 in. shovels are cut back a maximum of 2 in. About 90 per cent of the shovels which come to the reclamation plant in the scrap may be reclaimed in this way. A typical month shows the reclaiming of 418 track shovels with a saving of between \$90 and \$100.

Another special feature is that of cable repairs. A large



Part of Carload of Reclaimed Material Ready for Shipment to the Store Department



The Oxweld Station at the Reclamation Plant

amount of valuable material of this sort is lost on many roads because of the lack of an expert in splicing and repairing the cables. Realizing this, the superintendent of the reclamation plant deliberately set out to locate a competent man to

do this sort of work, preferably with experience in the navy. The result has been most gratifying.

BLACKSMITH SHOP

The blacksmith shop works over a large number of parts which come to it more or less damaged, and manufactures a considerable amount of material from scrap. It is showing a profit of from \$1,500 to \$1,800 a week. Track tools of all



Welding Car Bolsters with the Oxy-Acetylene Process

kinds, including adzes, spike mauls, clay picks, claw bars, lining bars and tamping bars are straightened and re-dressed. Broken coil springs are heated and drawn out with an air machine and are then made into jack bars, lining bars, drift pins and similar parts. A large shear is provided for shearing the coupler yoke rivets and the good parts are reclaimed. A shear is provided for cutting bars and rods to length. A



Repairing Car Bolsters, a Journal Box and a Coupler with Oxy-Acetylene

considerable number of brake rods are straightened and in many cases new ends are welded on.

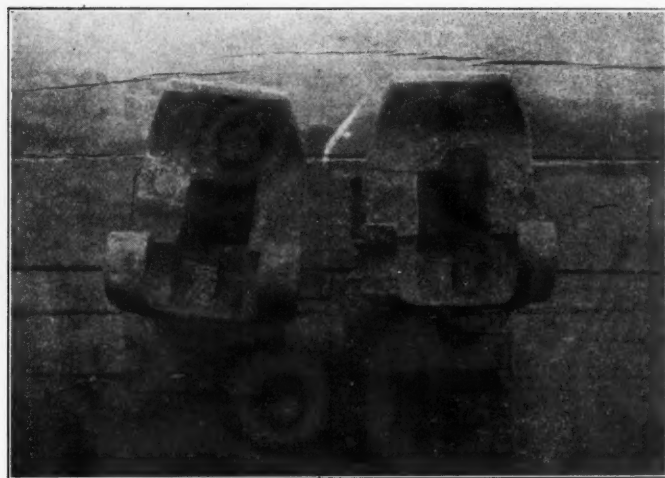
The manufacture of material from scrap relieves the blacksmith shops at the different shop plants of much of this work. For instance, round iron is cut into suitable sizes and headed for bolts and made into pins; bar iron which comes to the plant as scrap is worked up into drawbar shims, carrier irons and other locomotive and car parts. One end of the smith shop is used for relining journal brasses. Exceptional results have been obtained by welding carbon steel points on picks. These have given excellent service and are said to be even better than the new tools.

TRACK SPIKES

Hundreds of track spikes are annealed and reclaimed each day. As these are sorted out from the scrap pile they are transferred to a small building which is fitted with a pneumatic hammer and is used only for the straightening of spikes. Such spikes as do not come up to a certain standard are, of course, scrapped, but the large number that can be reclaimed is surprising. Scrap washers after being rattled with the spikes, nuts, air hose couplings, etc., are treated in the same way.

CEMENT SACKS

Cement sacks used in connection with construction work are carefully gathered and forwarded to the reclamation plant.

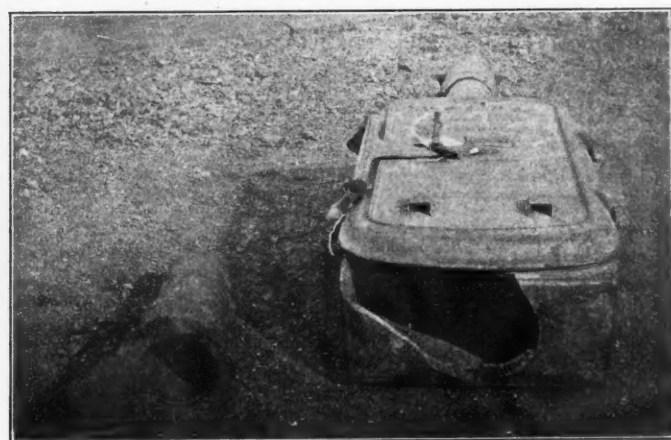


A Broken Coupler and a Similar One Which Has Been Repaired by the Oxy-Acetylene Process

Usually these are torn and damaged from rough handling in opening; an old box car has been fitted up for handling these, and one of the older employees gives all his time to sorting and repairing them. As many as 1,365 sacks were reclaimed in one month, resulting in a net saving of about \$84.

OIL AND WASTE

One of the smaller buildings is equipped with electrically driven centrifugal separators which thoroughly clean the



Broken Signal Post and Relay Box Awaiting Repairs

soiled and oil soaked waste which has been taken from journal boxes, and also reclaims the oil. The net return from this department runs from \$200 to \$300 a month.

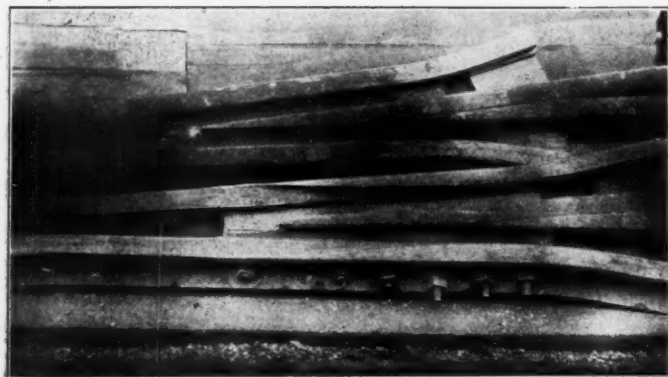
BRASS SCRAP

Special attention is given to the brass scrap because of its value, even as scrap. A small house has been built from old car timbers and metal car roofs which has a number of bins

for the different classes of brass, a scale being placed at the entrance to the building in order to accurately keep a check on all of this material.

BRAKE BEAMS

The reclaiming of brake beams is segregated in a small building because of the danger of flying rivet heads in strip-



A Worn Crossing Frog and a Similar One Repaired by the Oxy-Acetylene Process

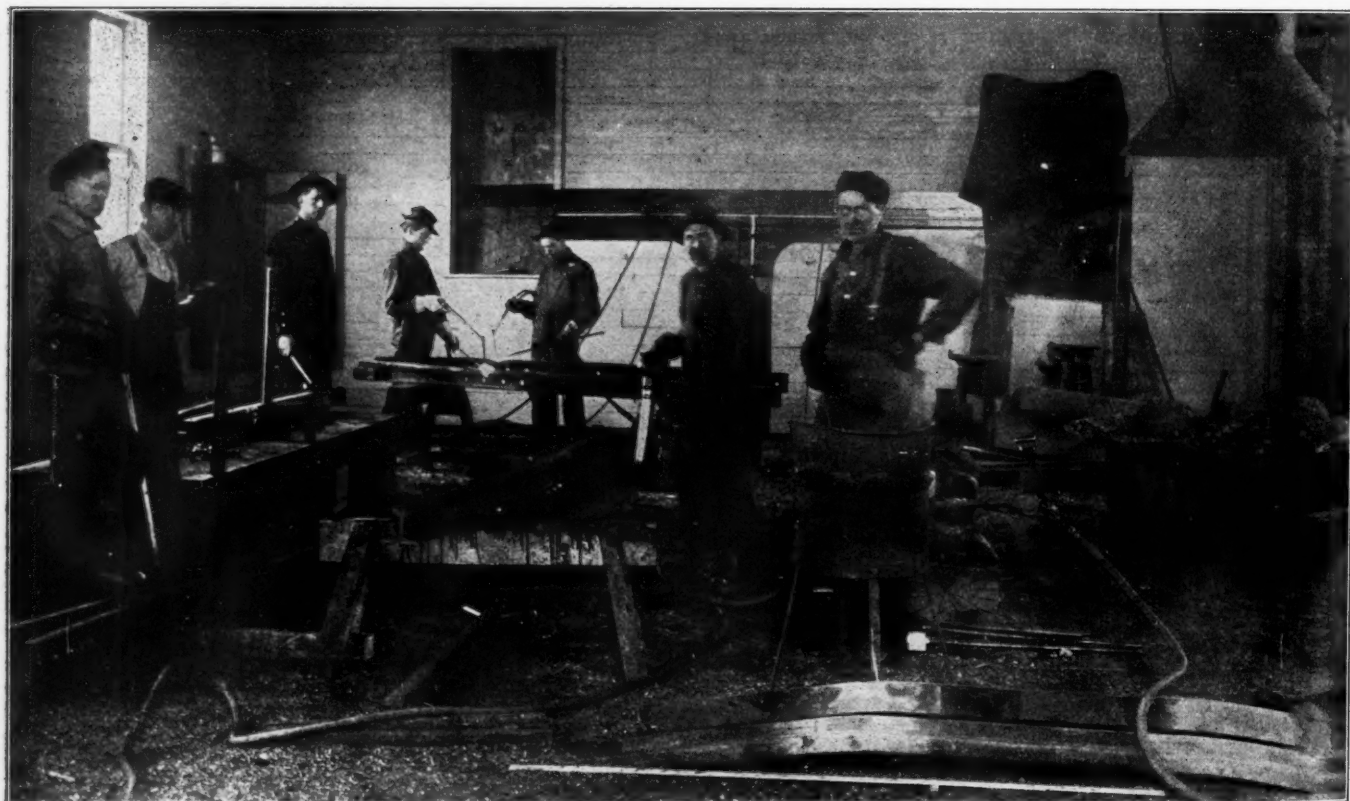
ping. All brake beams which are not too badly twisted or damaged are straightened in a bulldozer and are refitted with new heads and fulcrum castings if necessary. Truss rods for these beams are made in the blacksmith shop from scrap material. Brake hangers which have been damaged or distorted are straightened and fitted for further use. In one

or for cutting. The generating apparatus and the oxygen tanks, as well as the supply of carbide, are housed in a small building centrally located. In all essentials the plant is similar to that which was described in the article on oxy-



Cutting a Scrap Underframe, Thus Saving the Usable Parts and Securing a Higher Price for the Scrap

acetylene welding and cutting on the Frisco, September 11, page 467. The piping at the reclamation plant is entirely underground and consists of about 1,000 ft. each of pipe for oxygen and for the acetylene gas. There are 12 outlets or



The Shop in Which Frogs and Switches Are Repaired and Reassembled

month 1,692 brake beams were reclaimed with a saving of almost a dollar a beam, and 456 brake hangers were reclaimed.

OXWELD PLANT

Probably the most interesting part of the plant and that in which the most spectacular savings are made is that in which the oxy-acetylene process is used, either for welding

stations on this line and at present a force of eight welding operators is kept steadily at work.

CASTINGS

One of the most interesting classes of work reclaimed by the oxy-acetylene process is that of castings, whether of cast iron, cast steel, brass or other alloy. Many brake cylinders

or air reservoirs with broken lugs are repaired at a very small expense where otherwise it would be necessary to scrap the entire casting; even if the part which was broken off is



Old Boilers and Fireboxes are Cut with the Oxy-Acetylene Burners Into Pieces Convenient for Handling

not available it is possible in many cases to build up the casting with new material or to break a similar piece off of another scrap casting and weld it in place. An important

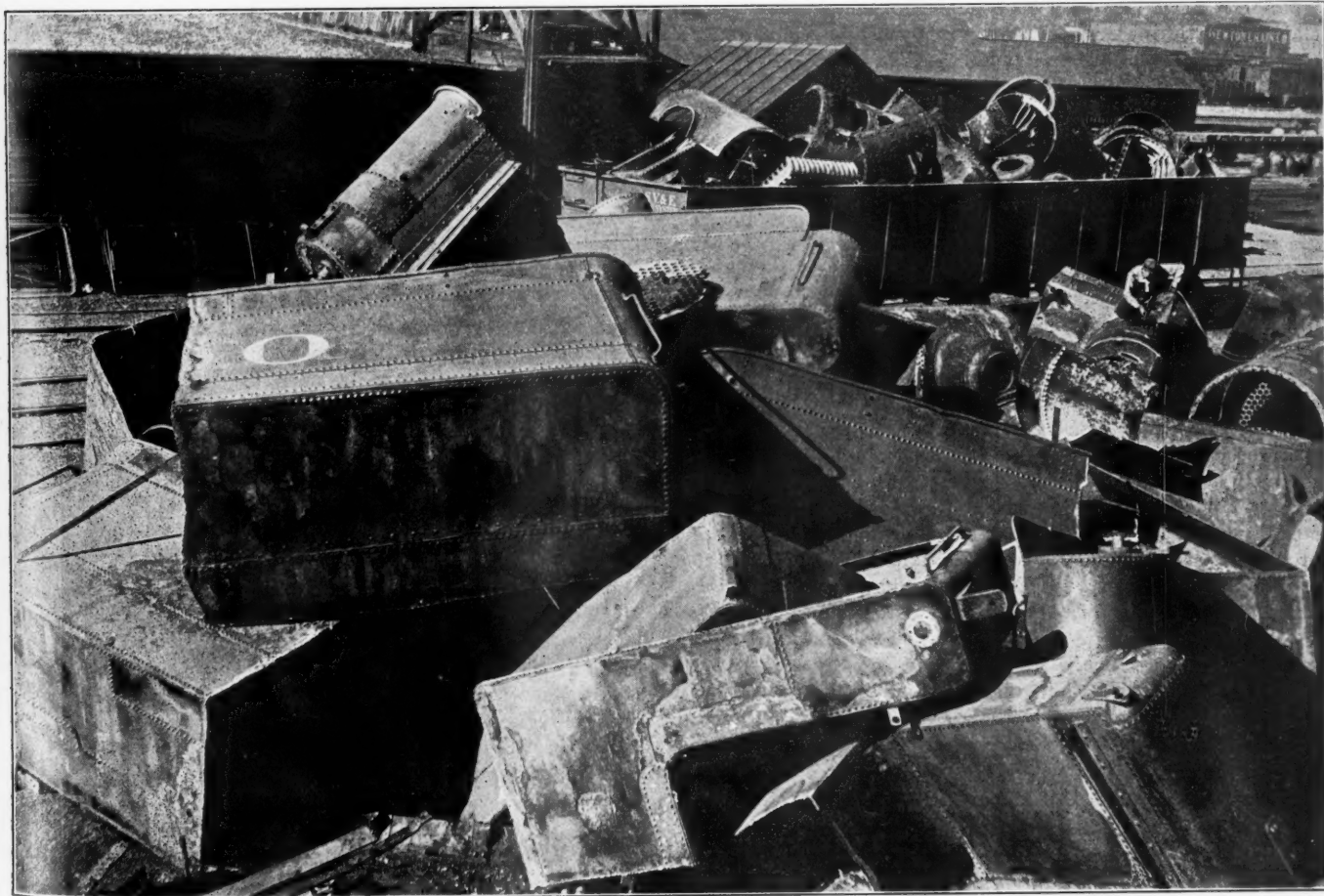
development which has been made necessary is a campaign of education among shop and engine house employees to emphasize the necessity of tying broken pieces of castings, which may be reclaimed, together so that time may be saved at the reclamation plant in supplying the missing parts.

The illustrations show typical jobs in the reclaiming of castings. As may be understood, the possibilities in this line are practically unlimited. Many cracked or broken car bolsters are welded and reinforced so that they are as good as new, and in some cases, even better. In possibly as many as 25 per cent of these cases the good ends of two badly damaged bolsters have been cut off and combined into one perfect bolster. Many couplers have been reclaimed which were cracked on the face or in the neck of the shank, or which have had broken knuckle pin bosses or lugs; in some cases repairs have been successfully made by filling in worn contours. One of the illustrations shows repairs being made to two bolsters, a journal box, a coupler and a center plate casting.

Locomotive buffer castings which have been broken or in which the holes have been worn out of round are reclaimed at a comparatively small cost. Many cast iron signal posts and relay boxes used in connection with the block signal system are repaired, the cost of welding usually varying between \$2 and \$3 per casting as compared to from \$16 to \$24 for a new part. A broken signal post and relay box which may easily be repaired is shown in one of the illustrations.

SWITCH AND CROSSING FROGS

A separate building, the interior of which is shown in one of the illustrations, is used for the repairing and reassembling of switch and crossing frogs. Ordinarily when these become worn they are rebuilt at a high cost. With the oxy-acetylene process the broken points and worn rails are built up to the original standard at a very small expenditure. As a typical



Old Locomotive Tanks Which Have Been Cut to Sizes Convenient for Handling

case, a frog which costs \$45.25 new was reclaimed with an expenditure of \$7.50, making a net gain of \$37.75. One of the illustrations shows a frog which had become badly worn and a similar frog which had been just as badly worn, but which had been repaired with the oxy-acetylene process. In building up the rails and points the metal is applied over a small area at a time and is hammered down while hot, thus avoiding the necessity of subsequent machining.

REDUCING SCRAP

Several of the illustrations show large parts, such as old boilers, fireboxes, tender tanks and car frames, being cut up with the oxy-acetylene cutting burner. This class of scrap commands a very low price, not more than \$2.50 a ton. When it is cut into sizes for convenient handling it will bring at least double that amount; the cost of cutting is comparatively slight, so that there is a net gain of several hundred per cent.

THE SAVING

That the best results may be obtained at the reclamation plant it is necessary for the mechanical department officers over the entire system to understand the work which is being carried on there and to realize the possibilities of co-operation. It is proposed to have all of the master mechanics, roadmasters, general foremen and others who handle material, pay periodical visits to the plant to study its workings and its possibilities. By seeing that parts broken from expensive castings are wired to them when they are forwarded to the reclamation plant they can help to increase the saving; in many cases they will send parts for repair direct to the plant rather than to let them take the roundabout method of going forward mixed up with a miscellaneous lot of scrap.

A careful record is being kept of all the work which is done at the plant with the idea of determining as accurately as possible the saving which results. Of course, these savings are not in all cases net, for much of the material, if it were not forwarded to the reclamation plant, would be reclaimed at the other shops on the system. There is little question, however, but that with the special organization at the reclamation plant the work can be carried on more economically and more thoroughly than it can at the other plants, allowing for the cost of transporting the material to and from the plant.

Statements are issued monthly showing the number of different parts reclaimed, the value of the new material used, the value of the scrap material used, the total labor cost, a charge for supervision and overhead expense, and miscellaneous shop expense. This in each case is compared with the cost of similar material purchased new and a column is added showing the total saving for each item and the saving per unit. The officers of the road have given the matter careful attention and thorough study, and are emphatically in favor of the plant. Started as an experiment, it was watched more or less critically with the idea that after all most of the saving might prove to be on paper; that this has not proved true is indicated by the fact that the work is gradually and steadily being extended and enlarged, although in many cases practices have been discontinued because it was found that it did not pay to try to reclaim certain parts. In making out the monthly performance sheet those items which do not show a saving indicate the loss in red and thus attention is focused on them. Needless to say an item showing up on the wrong side more than once or twice means either that prompt attention will be given in the attempt to reduce the cost of reclamation, or no further work will be done on such parts. The plant is in charge of Superintendent R. F. Whalen.

ENGLISH RAILWAY EMPLOYEES ENLIST.—Up to the present over 9,000 men have either left or are about to leave the London & North-Western for active service. The figures are as follows: Army Reservists, 2,328; Naval Reservists, 308; Territorials, 2,532, and Volunteers, 4,097; total, 9,265.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICIALS

The annual convention of the American Association of General Passenger and Ticket Agents was held in Boston on September 15 and 16. It was decided to change the name of the association to the American Association of Passenger Traffic Officials.

A complete report was presented by the committee on Economies in the Distribution of Folders, and the committee, with H. J. Phelps, general passenger agent of the Illinois Central, as chairman, was continued with instruction to carry on its investigation. The committee recommended a continuance of the present method of distributing folders by distributing agencies in a modified form, recommended the discontinuance of placing folder boxes in hotels in cities of less than 50,000 inhabitants, closer co-operation between the Official Railway Guide and the railways in disseminating information of this character, and the discontinuance of the distribution of folders on trans-Atlantic steamships for the reason that the Official Guide will answer the requirements.

The committee on Digest of Fares and Divisions was continued, and this publication has now become a permanent feature of the association work. It was decided to discourage the practice of furnishing business colleges and commercial schools with samples of tickets.

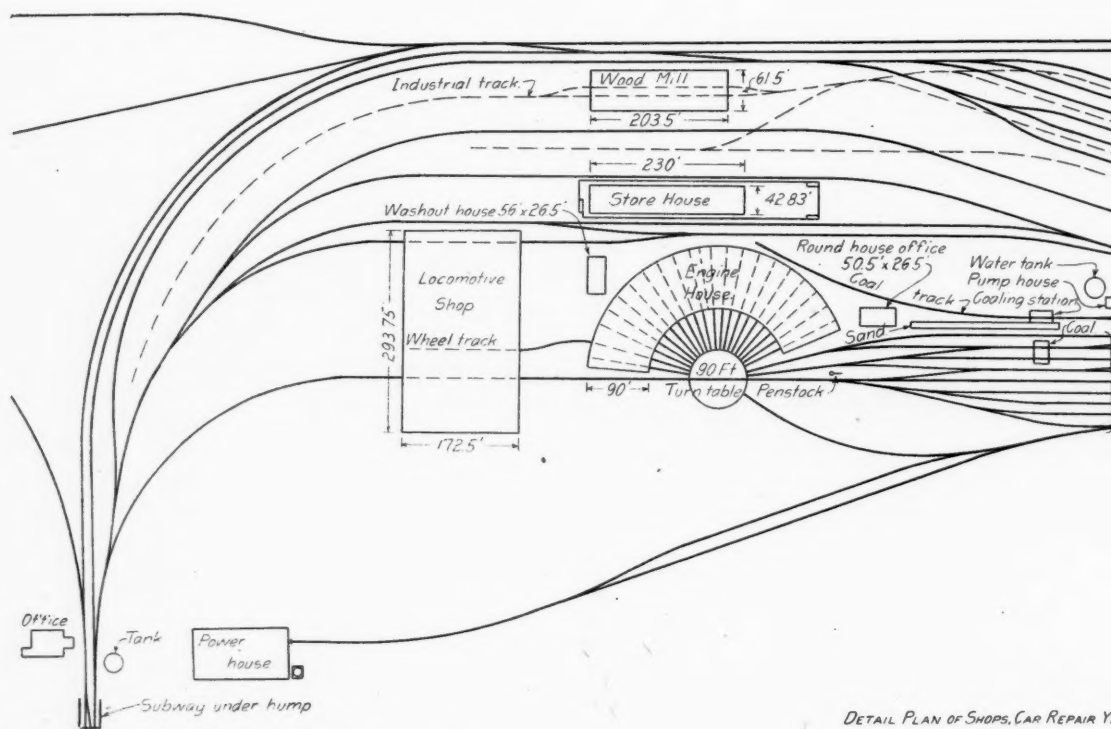
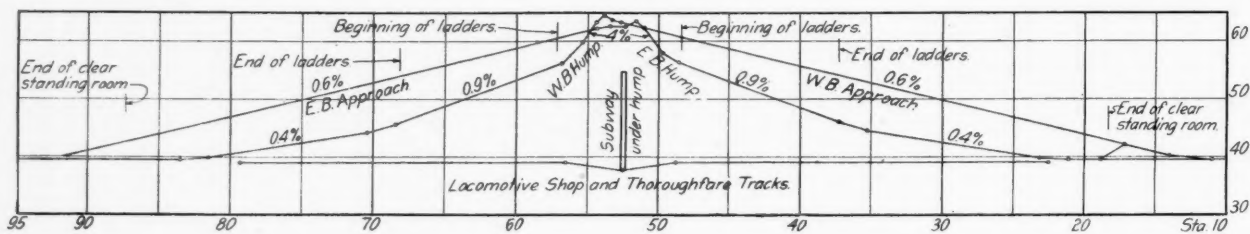
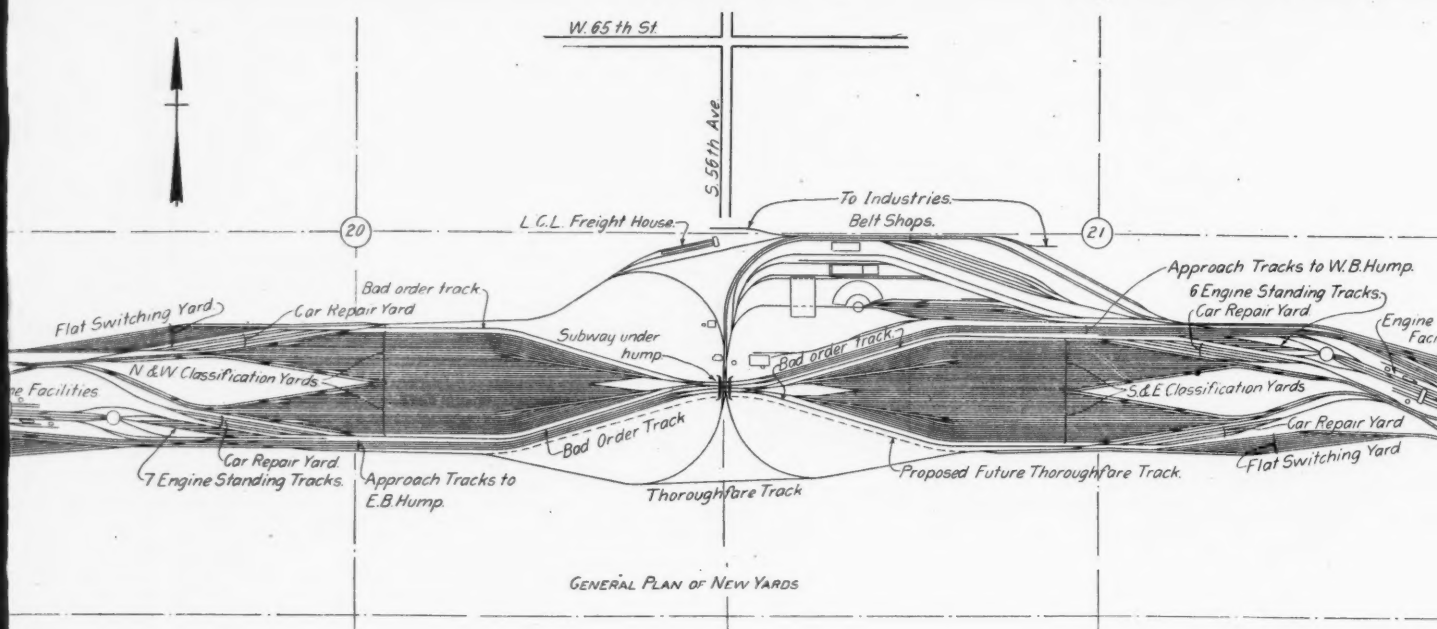
The question of curtailment of expenses in maintaining city ticket offices in foreign territory where the lines do not have initial rails was the subject of a thorough discussion, and a committee was appointed to continue further investigation of this subject. It was believed that a great saving could be made in this direction.

The committee on Limitations of Local Tickets made a complete report, which was endorsed and referred to the different territorial associations for action. The new multi-route tickets of horizontal and vertical forms have now received the endorsement of the association and a number of lines are experimenting with these forms with a view of determining which of the two forms will be most convenient and effective. It is hoped by the use of these forms to reduce coupon ticket form representation by 33⅓ per cent. The committee on Telegraph Code for the Handling of Association Matters reported progress and is expected shortly to be able to complete its work.

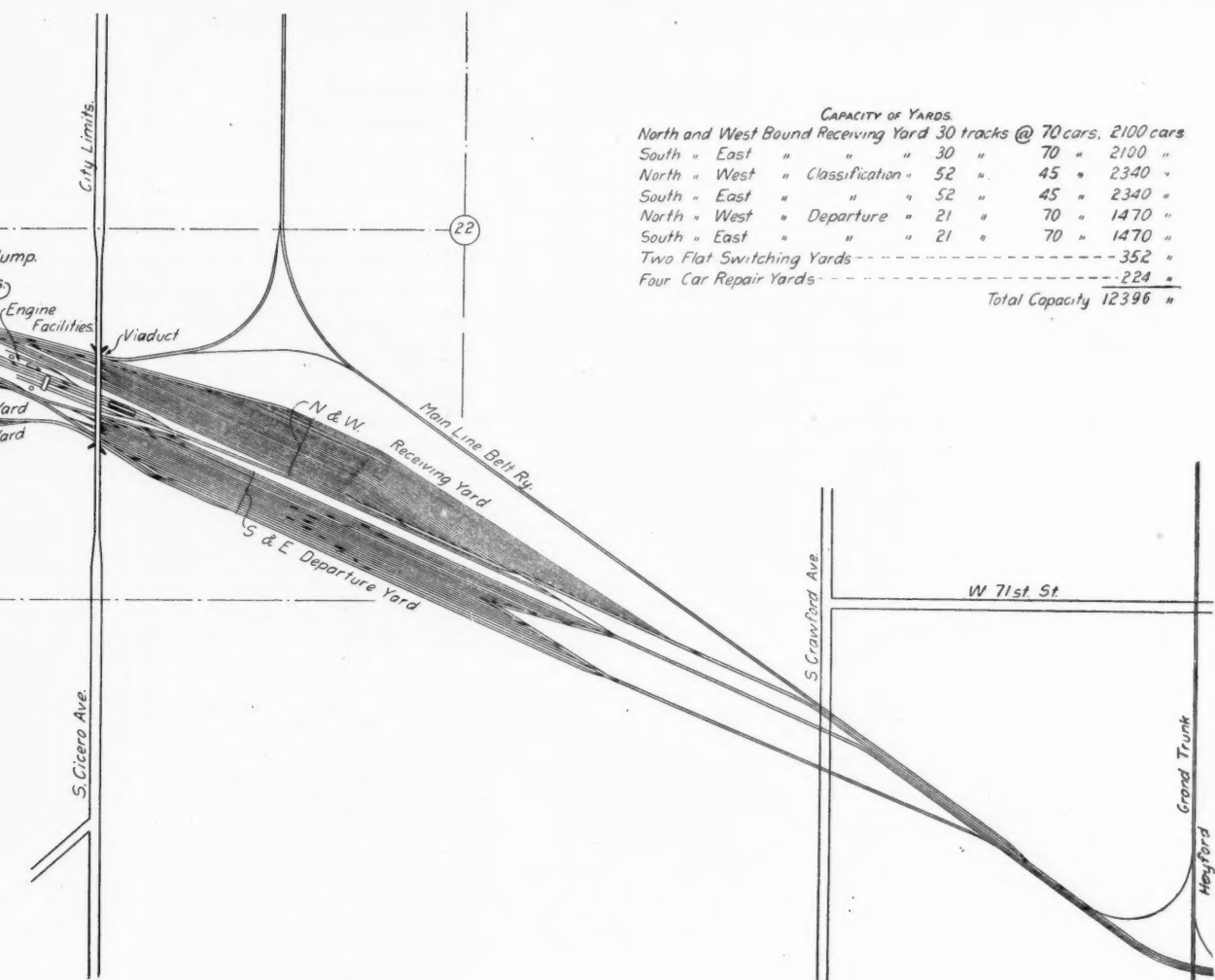
Addresses were presented by the representatives of other associations, as follows: A. J. Gillingham, auditor of passenger traffic, Pennsylvania Railroad, representing the American Association of Accounting Officers; George A. Morton, general baggage agent, New York, New Haven & Hartford, representing the American Association of General Baggage Agents; George J. Alexander, president of the Canadian Ticket Agents' Association; Frank J. Burke, ticket agent at the Union Station, Chicago, representing the International Association of Ticket Agents, and H. M. Fletcher, passenger agent, Atchison, Topeka & Santa Fe, representing the American Association of Traveling Passenger Agents. An address was also presented by E. E. Clark of the Interstate Commerce Commission on "American Passenger Service," which was published in last week's issue. Howard Elliott, chairman of the New York, New Haven & Hartford, also presented an address on the Natural Advantages and Summer Traffic of New England. Those in attendance at the convention were taken on an inspection trip over the electrified zone of the New York, New Haven & Hartford, between New York and New Haven, accompanied by General Manager Bardo and Consulting Engineer Murray, who explained the principal features of the work.

Officers were elected as follows: President, Gerrit Fort, passenger traffic manager, Union Pacific, Omaha, Neb.; vice-president, Alexander Hilton, passenger traffic manager, St. Louis & San Francisco, St. Louis; secretary, W. C. Hope, general passenger agent, Central Railroad of New Jersey, New York. The next convention will be held at San Francisco in 1915.

MAP, PROFILE AND PLAN OF NEW IN



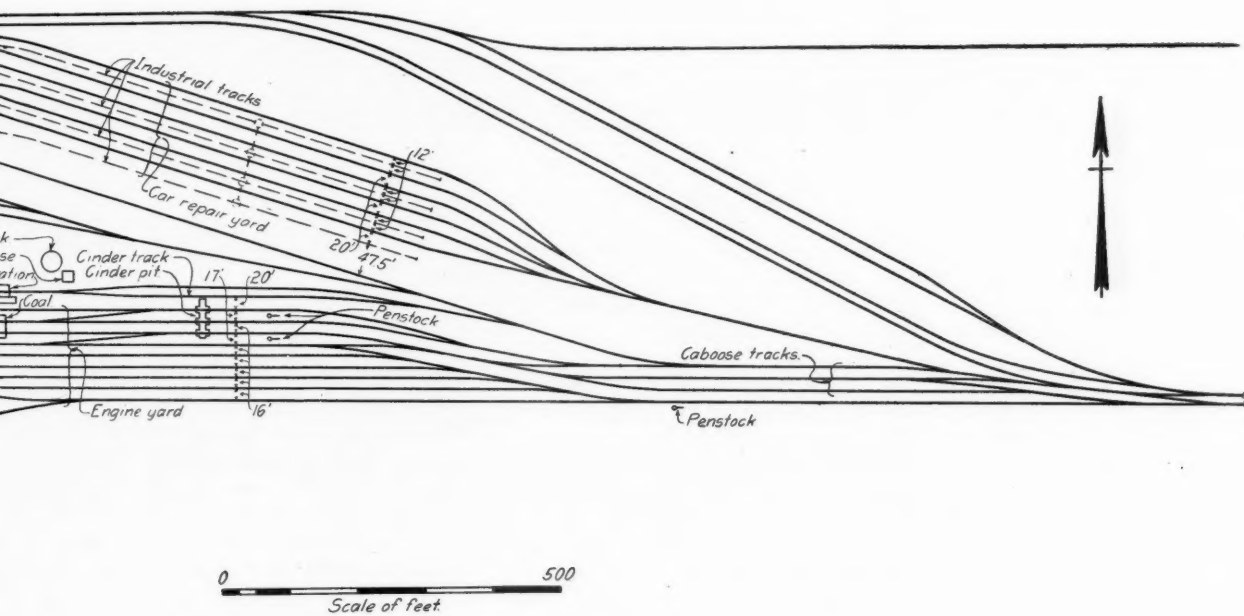
MAP, PROFILE AND PLAN OF NEW INTERCHANGE YARD BUILT BY BELT RAILWAY OF CHICAGO AT CLEARING



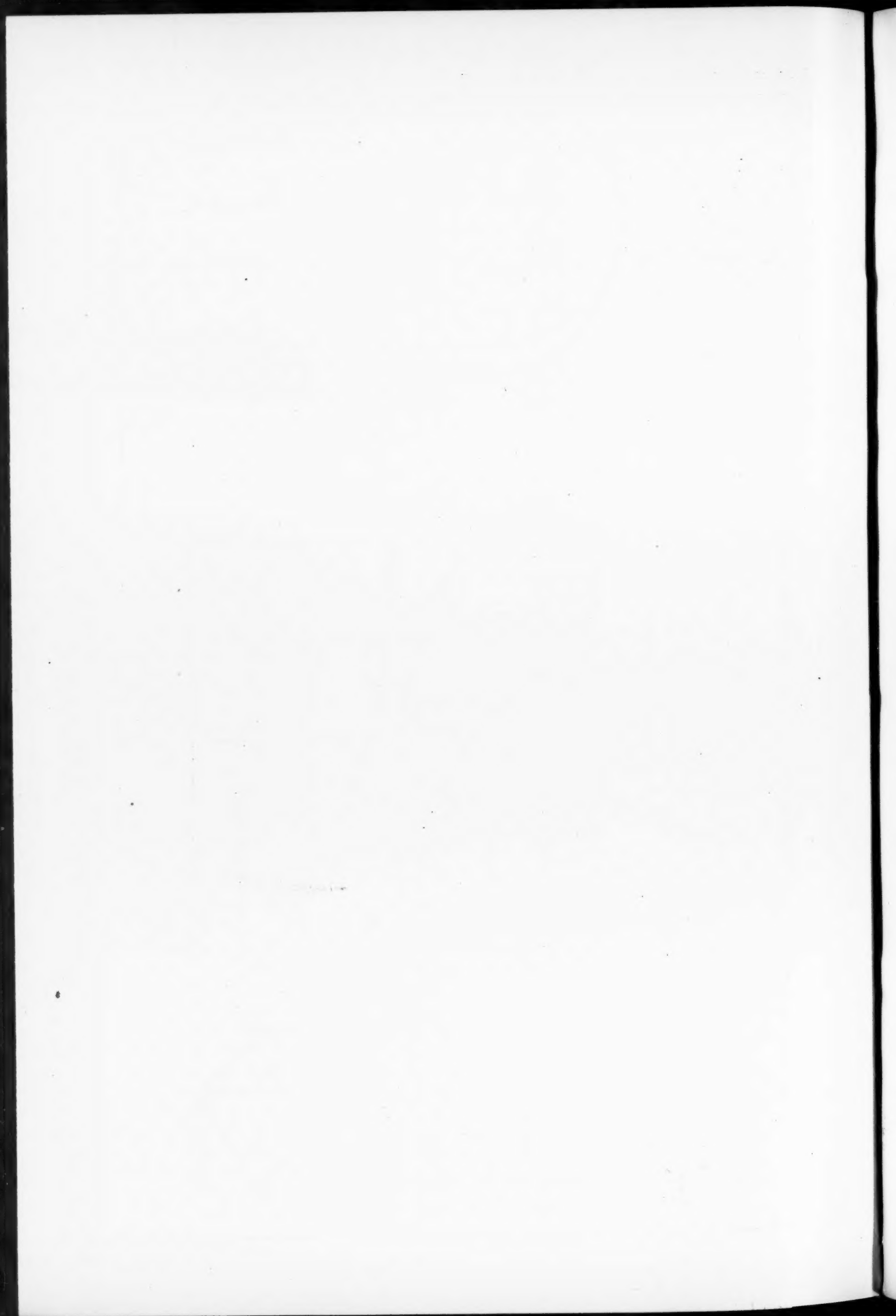
CAPACITY OF YARDS.

North and West Bound Receiving Yard 30 tracks @ 70 cars, 2100 cars

South " East " " " " "	30 "	70 "	2100 "
North " West " Classification "	52 "	45 "	2340 "
South " East " " " " "	52 "	45 "	2340 "
North " West " Departure " "	21 "	70 "	1470 "
South " East " " " " "	21 "	70 "	1470 "
Two Flat Switching Yards			352 "
Four Car Repair Yards			224 "
Total Capacity			12396 "



REPAIR YARD AND ENGINE TERMINAL



Clearing Interchange Yard for Chicago District

Reconstruction of Big Hump Yard by Belt Railway
to Relieve Downtown Terminals of Transfer Freight

[WITH AN INSET]

The operation of a large yard in the vicinity of Chicago to handle all or a large part of the interchange of through carload freight in order to decrease the switching within the city and reduce the congestion in the downtown district has been more or less seriously considered since 1899 when the Chicago Transfer & Clearing Company was organized to build such a yard at Clearing, about 10 miles southwest of the center of the city. The yard built by that company and rebuilt in 1898 by the Chicago Union Transfer Company has remained practically unused, but early in 1912 an agreement was reached by 12 railways entering the city, under which they became joint owners of the Belt Railway with the understanding that the Chicago & Western Indiana would buy the old yard, rebuild and enlarge

ber of loaded ones as the average for roads in this district, the total car movement is approximately 390,000 in and the same number out. Practically half of the loaded cars are for Chicago delivery, and half for points beyond, so that applying this ratio to the total car movement, about 195,000 cars must be transferred from one road to another at Chicago every month, or 6,500 cars every day. At present about 30 per cent of these cars are handled by belt lines and the remaining 70 per cent, or about 4,500 cars a day, are hauled into the congested district of the city to be delivered by direct switching to the connecting roads.

The clearing yard in its reconstructed form is adapted by location and design to become a central "clearing house" for all railways entering the city and will thus solve this most difficult



General View of West Half of Clearing Yard from the Hump, with the Four Eastbound Approach Tracks on Left, and Two Hump Tracks Leading to Classification Yards on Right

it, and lease its Belt divisions, including the yard, to the Belt Railway as formerly. This reconstruction work has now been practically completed, and it is expected that the yard will be put in operation in the near future.

THE PROBLEM AND THE PROPOSED SOLUTION

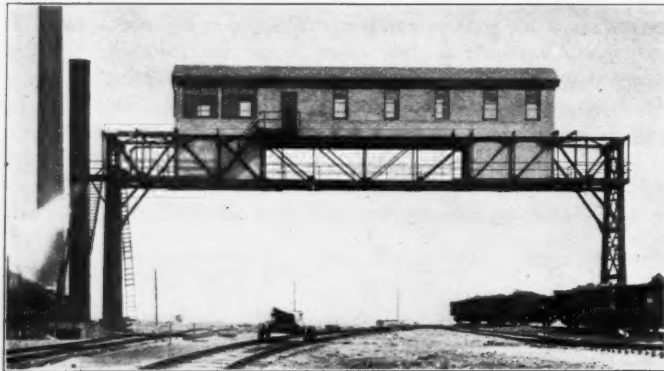
Since more freight is interchanged between roads at Chicago than at any other point in the country, the need for a comprehensive plan of handling such transfers promptly and economically is felt most keenly there. This heavy interchange of business is caused by the fact that 24 trunk line railways enter the city, practically all of which terminate there. In addition there are 14 terminal, switching and industrial roads in and around the city, originating and delivering large amounts of freight which is received from or transferred to the trunk lines. The total freight car movement into the city excluding empties, is approximately 260,000 cars per month and about the same number of loaded cars are taken out of the city. On the assumption that the number of empty cars bears the same relation to the num-

interchange problem, if satisfactory operating agreements can be made to enable its advantages to be realized to the fullest extent. It is owned by the Atchison, Topeka & Santa Fe, the Chesapeake & Ohio, the Chicago & Eastern Illinois, the Chicago, Burlington & Quincy, the Chicago, Rock Island & Pacific, the Chicago, Indianapolis & Louisville, the Erie, the Grand Trunk, the Illinois Central, the Minneapolis, St. Paul & Sault Ste. Marie, the Pennsylvania and the Wabash. The line of the Belt Railway makes direct connections with every trunk line entering the city and extensive improvements now under way will give it ample capacity to handle the interchange business of the other roads as well as the owning companies. The fact that some roads not interested in the control of the Belt have been giving it large amounts of transfer freight indicates that even more will be received from such roads after the new yard is put in operation.

The yard lies between the Belt and the Indiana Harbor Belt, making it possible for the roads interested in the latter line to send their transfer business to Clearing by that route if they

prefer. This line is owned by the Lake Shore & Michigan Southern, the Michigan Central, the Chicago, Milwaukee & St. Paul, and the Chicago & North Western, so that with the exception of the Baltimore & Ohio, the Chicago & Alton, the Chicago Great Western, and the Pere Marquette, every trunk line entering the city is interested either through ownership or affiliation in one or the other of the belt lines and three of these exceptions, the Baltimore & Ohio, the Chicago & Alton, and the Pere Marquette, have direct connections of their own to the new yard.

The design of the yard provides a standing capacity of about 12,400 cars and makes it possible to handle 400 cars an hour over



Interlocking Tower on Bridge Spanning the Hump Tracks

the hump. This would mean a daily capacity of 8,000 to 10,000 cars which is in excess of present demands and ample property is available for the addition of similar units if the capacity of the present yard should ever become insufficient. The yard is centrally located with respect to the breakup yards of the various through lines, resulting in a minimum average haul on transfer business. The distance from Clearing to the farthest break-up yard is approximately 20 miles.

REVISED DESIGN OF YARD

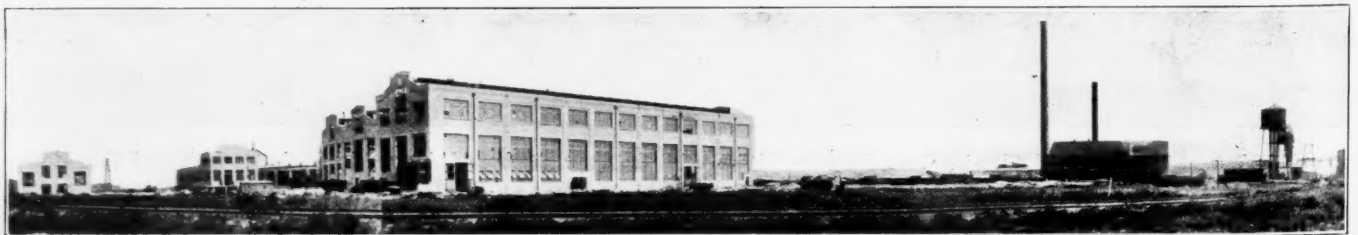
The old facilities consisted of a single hump between two classification yards with two tracks over the hump, one leading in each direction. The receiving yards were located alongside the hump requiring reverse movements. No departure yards

trains. The former will ultimately contain 30 tracks each and the latter 21, although only 16 and 12 tracks, respectively, are being laid at present, with a view to adding the others as the capacity is needed. The present capacity of these yards will be 2,240 cars for the receiving and 1,680 for the departure and the ultimate capacity will be 4,200 cars and 2,940, respectively. The receiving and departure yards for opposite directions are located side by side at the extreme ends of the layout, eliminating reverse movements. Thoroughfare tracks are provided along both sides of the yard with Y-connections under the hump, allowing movements to be made easily between any portions of the yard.

Two flat switching yards of 176 cars capacity each are provided near the end of each classification yard with direct leads into the departure yards. These are designed primarily to handle the business originating in the industrial district around Clearing, which will be brought in in small lots by switch engines. The Corn Products Refining Company's plant is the largest single industry in this district at present, although numerous smaller plants are grouped near the yard and further development in this territory is probable. The four car repair yards adjacent to the classification yards have a total capacity of 224 cars and are equipped to make light repairs only. Cars requiring heavy repairs will be switched to the heavy repair yard at the shops north of the hump. A bad order track leads from the hump to each repair yard and tracks for bringing back car riders to the hump will be located just outside these bad order tracks.

As the main line of the belt crossed the site of the proposed receiving and departure yards at the east end, a new double track line was built along the north side of the yard location extending from the Grand Trunk crossing at Hayford to a connection with the old location at about Sixty-seventh street. In order to provide a direct connection to the west end of the yard, a new double track line $4\frac{1}{2}$ miles long was built west from the old line on Fifty-ninth street and south to the yard.

The yard facilities are duplicated on the two sides of the hump. It is expected that in general trains from southern and eastern roads will be brought into the yard from the east end and depart for northern and western connections at the west end and that cars from the latter roads will move through the yard in the opposite direction. The trains will be brought to the yard by road engines of the respective companies running over the Belt tracks. The road engines will pull into one of the receiving yards, cut off, and go to the corresponding engine facil-



Wood Mill.

Roundhouse.
Storehouse.

Locomotive Shop.

Power House.

Hump
Tower.

Panorama of the Belt Railway Shops Located Just North of the Hump

were provided, although two five-track overflow yards at the outer end of each classification yard were intended to serve the same purpose. This old layout was inadequate for the proposed method of operation, requiring the enlargement and rearrangement of the facilities.

The new design retained the old hump between the two classification yards, its width being increased to allow four tracks to be operated simultaneously, two in each direction. The classification yards are each divided into two units of 26 tracks, each unit being served normally by one of the hump tracks, although provision is made for either of the tracks in one direction to serve either of the corresponding yard units. The classification tracks have a capacity of 45 cars each, making the total capacity in the classification yards 4,685.

The receiving and departure yards are designed for 70-car

ity layout to coal, clean fires, and take water and sand. The engine can there be turned and the same crew can pick up a train destined for its road from the adjacent departure yard. Engine facilities are provided at both ends of the yard and the proximity of these facilities to the receiving and departure yards will reduce the delay to road crews to the minimum.

The operation of classifying the incoming trains and making up outgoing trains will be performed by the Belt Railway. A four-track lead is provided from each receiving yard to a point about 200 ft. from the hump where the four tracks merge into the two leading over the hump. This arrangement allows two trains to be pushed up almost to the hump, while two other trains are being classified on the other tracks so that they are in position to begin classification immediately when the others have finished. This will effect an important saving in time

over the usual system under which the hump engine has to run back to the receiving yard for another train before work can proceed.

The grade on the approach tracks to the hump is 0.6 per cent. The profile on the other side of the hump includes a short accelerating grade of 4 per cent, 0.9 per cent through the ladders, and 0.4 per cent through the body of the classification yard. The westbound hump is 1 ft. higher than the eastbound to compensate for the force of the prevailing winds. The switches along the ladder track leading into the classification yard will be operated by an electro-pneumatic interlocking system from a tower on the hump.

RECONSTRUCTION OF THE YARD

The design of the new yard made it possible to utilize the sand fill in the old hump, a portion of the old track material, the power house, freight house and office building, the sewer system, and a portion of the water system. The first work undertaken was the raising of the outer ends of the classification tracks on a sand fill to bring them up to the new level. The old hump fill was then widened for the additional classification and approach tracks, the old tracks being shifted to the new

sired height above the yard track and a locomotive crane was then used to shift the dumping track to make room for the next plowing. In addition to the sand fill, 177,000 cu. yd. of earth removed from miscellaneous excavations was placed in the fill.

A steam shovel was used in making the cut for a single track connection to Argo, passing under four tracks near the west entrance to the yard, and a team outfit graded part of the new connecting line. These portions of the work were contracted to Andrew Ward & Sons, Chicago. The grading on the change in the old line and the new connection totaled 117,300 cu. yd.

In making the cut through the hump for the new subway, a 25-ton locomotive crane rigged with a clam shell bucket was used, operating on a track laid from the face of the excavation back parallel to the hump to a point where the fill was needed. This crane handled 9,000 yd. at a price less than the contractors' estimate.

The new yard contains 134 miles of track, of which 22 miles is old track shifted into the proper position and the remainder is new track, or old track relaid. The old yard was laid with soft wood ties and 75-lb. rail, and was well ballasted with cin-



Locomotive Shop, Roundhouse and Storehouse Nearing Completion

locations and new ones laid as the filling progressed. The construction of the new departure yard of 12 tracks at the west end was pushed in order to provide a place for receiving large quantities of sand for filling which was brought in over the Indiana Harbor Belt from Dune Park.

As soon as switch material could be secured, two switch laying gangs were started on the ladder tracks, the classification yard switches at the hump being laid first in order to give the interlocking contractor an opportunity to start his work. The thoroughfare tracks were then laid to provide connections between the ends of the yard without going over the hump, making it possible to rebuild the hump subway, which had been designed only for foot and team traffic and was enlarged to carry two tracks.

A total of 1,051,500 cu. yd. of sand was placed in the yard fill. This material was handled in Haskell & Barker cars using a plow and spreader to unload and place it. In making the fill for the approach tracks to the hump which have a maximum difference in elevation of 8 ft. above the body of the yard, the wing of the spreader was elevated to build up the fill to the de-

ders, gravel and slag. It contained 11 miles of lateral drain pipes, so that no additional provision for sub-drainage was required. The old ties that were suitable were used in the new yard in less important tracks with tie plates. All new ties are hard wood, those on curves being tie-plated. The old ballast was reclaimed whenever possible. Stone ballast was used for all ladder and important running tracks with cinders on the other tracks. A total of 112 miles of cinder ballast and 22 miles of stone was placed. All of the 94 miles of 75-lb. rail in the old yard was used in the reconstruction and 80-lb. new or relaying rail was laid on ladders and running tracks. There were 353 turnouts and 58 double slip switches in the old yards, and there are 845 turnouts in the new yard, all double slips having been eliminated. No. 9 turnouts are standard throughout. The frogs from the old yard have been placed in the caboose yards, shop tracks, repair yards and the less important tracks. The new frogs are of solid manganese of a special design by the Chicago & Western Indiana. The guard rails are Ajax one-piece manganese; the switch points are 15 ft. long and the switch stands are Economy for yard tracks and Mansfield for main lines.

South Cicero avenue is carried over the yard on a ten-span viaduct of concrete piers and through steel girders encased in concrete. The spans vary from 38 ft. 2 in. to 69 ft. 8½ in. The approaches are made of sand fill with a street grade of 3.5 per cent. The sand fill at each end of the viaduct will be restrained from overflowing the tracks by crib walls built up of concrete moulded in pieces about the size and shape of cross ties and laid in the same manner as ordinary tie cribs. A similar viaduct will probably be built next year to carry Crawford avenue over the east approach.

The subway under the hump is a double-track structure with a clear opening 30 ft. wide and 17 ft. high from top of rail to clearance line. It consists of re-enforced concrete abutments and transverse girders encased in concrete. The total yardage of concrete placed in the yard work was about 2,250.

The two-story interlocking tower which houses the yard plant is set up on a structural steel bridge spanning the hump. The walls of the tower are of metal lath and cement mortar, and the roof is of asbestos shingles. Two machines of 72 levers, each operating 65 switches and two signals, control the two classification yards. The machines are located on the upper floor of the tower in operating rooms at the ends of the building, facing the yards they control. The space between the operating rooms is occupied by a clerical office and the lower floor of the tower contains the relay rooms.

The machines are of the Union Switch & Signal Company standard push button electro-pneumatic type and the switches are operated by motion plate type switch and lock movements. The track circuits controlling the indicators in the machines use 220-volt, 60-cycle a. c. power. The signals controlling movements over the hump tracks are mounted on the lower chord of the bridge.

The low voltage control current for the machines, switches and signals is furnished by a 400 a. h. storage battery at the power house which is charged by two motor-generator sets. The a. c. power for the track circuits is fed from a separate transformer at the power house. The compressed air is supplied by the same compressor that serves the shops.

NEW LOCOMOTIVE AND CAR SHOPS

As the track elevation work now under way will make necessary the abandonment of the Belt shops at Eighty-third street, and the completion of the yard will effect important changes in operating methods on the Belt it seemed best to provide adequate shop facilities at the new yard. These shops were located just north of the hump and not far from the existing power house. The principal new buildings include a locomotive shop, roundhouse, storehouse and wood-mill.

The locomotive shop is of the transverse lift-over type with six pits; the blacksmith and boiler shops being included in the same building. It is a steel frame structure, 172 ft. 8 in. by 293 ft. 9 in., with brick walls and a composition roof on wood sheathing. It is unusually well lighted by side and monitor windows, which are equipped with David Lupton steel sash and the Pond operating device. The building is divided into three bays, the heavy machine, 60 ft. wide, the light machine, 40 ft. wide, and the erecting, 70 ft. wide. A 150-ton crane is provided in the heavy machine bay and 10-ton cranes in the light machine and the erecting bays. The building is heated by warm air, the circulation being secured by Sirocco blowers through ducts, part of which are overhead and part under the floor. A track connection is provided through the locomotive shop which passes directly over the turntable at the roundhouse and connects to the wye tracks under the hump allowing an engine to be brought in from either side. A track also leads into the shop from the center drop-pit in the roundhouse for bringing wheels to the shop.

The engine house has 20 stalls, with three drop-pits. It is of timber frame construction, 90 ft. deep, with brick walls, concrete footings, tar and gravel roof, cast iron jacks and balanced sash, those on the inner circle being equipped with the

Pond operating device. The National boiler washout system was installed, and a 90-ft. turntable is provided, operated by a Nichols electric tractor. The capacity of the roundhouse is not as large as would ordinarily be necessary for the number of locomotives used by the Belt, but in the majority of cases, the engines will not go into the house, when out of service temporarily. A four-track storage yard is provided for such engines, only those requiring work to be done on them going into the house.

The storehouse is a brick building, 230 ft. long by 42 ft. 10 in. wide, with a material platform surrounding it. A second story is provided across one end of this building for the master mechanic's office, and the oil storage room is located in the basement. The Bowser system of oil handling is used, with square tanks instead of round ones in order to economize space.

The wood mill is 203 ft. 6 in. long by 61 ft. 6 in. wide, having brick walls, steel roof trusses, a Brooks roof and wood block floor. The rough lumber will be stored west of the wood mill and after finishing will be run out into the car repair yard east of the building on industrial tracks.

The engine facilities east of the roundhouse include a 400-ton Roberts & Schaefer concrete coaling station with provision for locomotives to take coal and sand on four tracks; three 100,000-gal. conical bottom steel tanks of the Chicago Bridge & Iron Works design, supplying penstocks and service lines; and cinder pits of the receiving-hopper type under three tracks.

The improvements to the old powerhouse and its equipment include a new 450-h. p. Babcock & Wilcox boiler, Green automatic stokers, the reconstruction of the headers and breeching and the construction of a new Wiederholdt tile and reinforced concrete chimney, 200 ft. high and 8 ft. in diameter.

ORGANIZATION

Practically all of the work on the yards except the interlocking installation was handled by company forces in charge of the engineering department of the Belt Railway, of which E. H. Lee is vice-president and chief engineer. The construction of the shop was handled under contract by George B. Swift & Company, Chicago. The interlocking system was installed by the Union Switch & Signal Company, Swissvale, Pa., under the supervision of F. E. Jacob, signal engineer of the Belt. F. E. Morrow, principal assistant engineer, was in charge of the preparation of plans and the office work connected with construction operations. V. R. Walling, first assistant engineer, was in direct charge of the work in the field and was assisted by an engineer for the yard work, and one for the shops. The track work was directed by a supervisor of track and the concrete work by a supervisor of bridges. Excellent co-operation between the assistant engineers, the supervisors, the chief clerk and material agent and the car-tracer, was secured by holding daily meetings at 1 o'clock, at which all of these men suggested plans for improving methods and discussed their various requirements for the following day's work. The cost of supervision was reduced by the free use of motor cars, as the work extended over a distance of five miles, exclusive of the Fifty-ninth street line. Four cars were used, one for the first assistant engineer, one for the supervisor of track, and the other two running on a regular schedule each way from the hump.

A maximum force of about 1,200 men was required in 1913, and about 800 in 1914. Labor was very scarce in 1913, but by authorizing the work early, enough men were secured before they shipped out in large numbers. The supply was irregular throughout the season, however, as many as 900 time checks being issued in one month for men leaving. Conditions were much better in 1914 and no difficulty was experienced in getting enough good men. A camp was maintained for the laborers at the yard, the contract for boarding being let to the Consolidated Boarding & Supply Company, Chicago. This camp was described in the *Railway Age Gazette* of May 16, 1913. In addition, a daily work train was run from the Dearborn street station.

What the Press Thinks About the Rate Case

Welcome Prospect of Advance in Charges; Recognize Carriers' Needs and Demand Prompt Action

The announcement that the Interstate Commerce Commission has granted the petition of the railways in Official Classification Territory for a reopening of the advanced freight rate case, decided on August 1, and the setting of the date for a rehearing on October 19, have aroused widespread editorial comment in the press of the country. With a remarkable approach to unanimity the daily newspapers are supporting the position of the railways in the emergency which has come upon them, and are demanding not only that the commission accede to their request for higher rates, but that it act promptly in reaching its decision. Following are some extracts from the editorial utterances on the case which have come to our exchange desk in the last few days from all parts of the country. No attempt has been made to select those favorable to the railways. It is significant that but one paper comes out squarely in opposition to higher rates. Several are non-committal and two or three express regret that rates apparently are to be increased, but the great majority demand immediate relief for the railways in the form of higher revenues in the interest of the commerce of the country.

AS EARLY AS COMPATIBLE WITH JUSTICE

[From the Cleveland Plain Dealer]

It will be agreed that to give the roads another chance to present their case was just, though friends of the roads' demands are likely to complain because the matter is not to be attended to more promptly. Though the date of the opening hearing has been set later than one might believe wise, under the emergency condition, the commerce commission ought to be able to proceed with its full inquiry with reasonable speed. The delay in rendering the other decision was widely criticized. But in this new investigation the commission will necessarily go over much of the same ground covered before. It will be to the interest of all to have a decision reached as early as compatible with justice, which presupposes thoroughness.

IF THEY NEED IT, THEY NEED IT NOW

[From the Chicago Herald]

The hearings should be speedy. No nine months, nor six months, nor even one month, should be consumed in reaching a decision. Especially there should be no time wasted in reviewing ancient history, nor in considering theories about how railroads might be run, under government ownership, or any other plan different from that under which the railroads have been created. In the well-known words of a late president of the United States, "a condition, not a theory," confronts the railroads, and with them the whole country. It is a plain business proposition that the country cannot prosper if the railroads are squeezed into bankruptcy. The railroads say they are being suffocated by iron rings around their throats—by governmental power limiting the price of the only thing they have to sell. They should be able to prove it easily, or it should be easily disproved if they are not telling the truth. It's all a matter of plain figures, already collected or easily obtained. If the railroads need a pulmotor, and they are visibly gasping for breath, they need it now, not in nine months, or six months, or even one month hence, but NOW!

COMMISSION SHOULD GRANT RELIEF

[From the Daily Oklahoman, Oklahoma City, Okla.]

The consensus of intelligent opinion throughout the country is that the roads are entitled, in common fairness to the greatest single line of business, to an increase in rates; perhaps not to five per cent, as demanded, but to some per cent which will represent the difference between prosperity and bankruptcy. We have seen drastic economies practiced on the part of the roads in the past

year or so in order to make both ends meet; trains have been discontinued, employees reduced in number, and betterments postponed. But notwithstanding these economies, the roads generally claim that they are still unable to keep their heads above water owing to the increasing cost of everything they have to buy, the advancing wage scale, and the reduced passenger rate. No fair-minded citizen desires to see the roads hampered by regulation in such degree as to destroy their prosperity. We must display the live-and-let-live spirit toward them, the same as toward the humblest citizen of the land. If it can be disclosed that their rates, both freight and passenger, have been regulated to the degree that they are no longer capable of yielding a fair return upon the money invested in them, then it is obvious that the Interstate Commerce Commission should grant some measure of relief and the public accept the same uncomplainingly.

WIDESPREAD HOPEFULNESS

[From the Milwaukee Evening Wisconsin]

There is widespread hopefulness over the announcement from Washington that the Interstate Commerce Commission has decided to reopen the freight rate case and will begin hearings October 19.

MORE SUBSTANTIAL JUSTICE

[From the Kansas City Journal]

The reopening of the eastern railroad rate cases by the Interstate Commerce Commission holds out the hope that more substantial justice will be rendered than was accorded in the recent decision. The increase granted in the previous decision was proved to be nominal rather than helpful or fair. The more the experts studied the so-called "assistance" doled out by the commission, the more hollow and unsatisfying it appeared. The net result was a pittance, when there should have been generous concessions if very serious consequences were to be averted. It is nonsense to regard justice to the railroads or the big business interests of the country as injustice to the people generally or to so-called "small business." "Big business" cannot be cudgeled into financial insensibility without destroying general prosperity, and it is earnestly hoped that the new conditions which have arisen will bring about a new fairness that will ameliorate the situation all along the line. The Interstate Commerce Commission has the opportunity to do on a comparatively small but helpful scale what ought to be done by the legislative authority of the government and of the several states on a much larger scale.

ENTITLED TO A FAIR HEARING

[From the Chicago Tribune.]

It really should be a work of supererogation to urge a fair and unbiased consideration of the carriers' application on its merits. The sentiments expressed by the President in his letter to Chairman Trumbull are the sentiments which every unprejudiced and enlightened man of business must share fully. The railroads are not asking for special or preferential treatment; they are not resisting or belittling the reforms which the commerce commission advised in its decision of July last. The recommendations that were then made with regard to retrenchment, abolition of favors, and correction of abuses are being carried into effect. But the direct claim made is that a more material increase in revenue is needed than all the reforms pointed to by the commission are capable of yielding. The railroads have assumed the burden of proof, and they are asking merely for a sympathetic and fair hearing. To this they are entitled. To this the great body of investors in railroad securities is entitled. To this the interests and welfare of the na-

tion are entitled. Private industry is free to advance rates or charges; the railroads are not free. However adversely affected by the war and loss of freight, they cannot take a single step in the direction of revenue increase without the consent and sanction of the commission. The commission is independent and in a position to take a large, judicial, fair view of the question.

PROBLEMS CALL FOR IMMEDIATE SOLUTION

[From the New York Evening Post]

Two of the seven commissioners dissented on grounds which were carefully and vigorously set forth, from the decision of the majority of their colleagues. At best, the decision rested on certain presumptions whose correctness could be established only by experiments, and on certain suggestions of economies whose effectiveness could be tested only by time. But months of time and experiment, in doubtful and disputed questions, where the facts may eventually not bear out the commissioners' contention, are precisely what cannot be awaited, in the present extraordinary juncture. And if they could, there would still remain the immense dislocation which has been brought upon the financial world by the European war—some of the urgent problems arising from which call for immediate solution.

MOVING TOWARD HIGHER RATES

[From the Lincoln, Neb., Daily Star]

When the Interstate Commerce Commission recently ordered a reopening of the rate case involving the application of more than 50 eastern railways seeking a five per cent increase of freight rates, its action was some evidence that forces are at work for more liberal treatment of railways that are hard to overcome. Notice is given that the associations of shippers who have contested the application of the eastern railways for higher freight rates will continue their protest at the new hearing, which means that it will not be an ex parte affair, but all the circumstances indicate that we are moving toward a period of higher railroad rates, excuse for which is to be found in conditions created by the war abroad. These conditions will be urged as justification for an increase that could not be justified to the satisfaction of the Interstate Commerce Commission before the war began. Thus there will accrue to the American people another war tax arising from the bloodthirstiness of other countries.

GIVE THE COMMISSION TIME

[From the Manufacturers' News, Chicago]

It is perhaps unfair to jump upon the Interstate Commerce Commission because that body did not render a satisfactory decision—to anybody—regarding freight rates. Conditions have been altered materially in this country, as in other countries, by the European war. The "near decision" made by the commerce commission was based upon conditions as they existed a year or two ago, about the time the commission, as a body, went into hibernation. Now that the commission has been advised that there is a war in Europe and the railroads are unable to obtain any money for improvements the commission, no doubt, will be glad to bring its decision up to date. The commission undoubtedly means well. Give it a chance. It has at least two members, those in the confidence of President Wilson, who know what is going on. Commissioners McChord and Daniels might with perfect propriety tell the other commissioners that conditions alter decisions. The freight decision of the Interstate Commerce Commission needs revision. The commissioners should not let pride, or ethics, or even politics, stand in the way of the welfare of this country.

NO EXCUSE FOR DELAY

[From the Brooklyn Eagle]

There will be hearings, of course. As usual, volumes of testimony will be taken, but little or nothing not already known will be developed. What is already known to a certainty is that the railroads are carrying burdens which constantly increase, thanks to such legislation as the full-crew law and to

higher taxes. Equally certain is it that it is useless for them to try to raise money by any means other than through an increase of rates, but the commission will want to be told things of that sort over again. Fortunately, however, the President is taking a hand in the performance. He has a habit of inducing results.

A CONDITION, NOT A THEORY

[From the St. Louis Globe-Democrat]

The discussion of the needs of American railroads has passed the stage of the question of fairness. The interest of the public is now vitally involved. Past sins and the responsibility therefore can no longer be regarded as the issue. In the language of Grover Cleveland, a condition and not a theory confronts us. The railroads are not making money and have not been for some time. The public is vitally concerned in more ways than one. Nothing would be more immediately disastrous than such a paralysis of our transportation system as would seriously impair the service to which American business has been accustomed. We have grown so used to excellent service that it is almost impossible to conceive how business was done in ox-team days. Should our transportation system break down it would spell ruin for general business. Putting our railways on a paying basis is not simply an act of justice. It is a consummation that is vital to the entire public. It should be with a full realization of this fact that the applications for increased rates are considered.

CRISIS IS OBVIOUS

[From the New York Tribune]

The Interstate Commerce Commission should approve without delay the railroads' renewed request for a five per cent increase in freight rates. There is fortunately no occasion for the long investigation which preceded the commission's denial of the request when it was first presented. The commission went into the matter exhaustively at that time. It has all the facts, except the new facts which the railroads offer in their latest letter, and these recent developments are patent. They need no study or long consideration. The crisis is obvious. If the Interstate Commerce Commission is not utterly blinded by pride of opinion it will enable the railroads to face it at once.

STILL AFTER FREIGHT RATE INCREASE

[From the Omaha Bee]

Not content with the substantial victory won in the ruling of the Interstate Commerce Commission on their petition for five per cent freight rate increase, 112 railroad companies, comprising 35 railway systems operating in the territory affected, have come back for a further modification to accord with their original demands. There is no doubt the railroads have been encouraged in this procedure by the knowledge that the commission was divided over the merits of their showing, and that its decision was rendered by a majority with a vigorous dissent from the minority. Taken altogether, it seems to us that in asking a reopening of their case thus early the railroads are, to use a colloquial phrase, trying to rush things, as if fearing a more deliberate experiment might lose to them the force of the argument.

NO ROOM FOR DOUBT

[From the Salt Lake Tribune]

If there was room for doubt as to the necessity of an increase three months ago, there can be little doubt on that point now. The war has supervened to still further reduce railroad revenues. If the Interstate Commerce Commission had acted generously in the first instance the railroads would not be reduced to their present plight. Jugglers of statistics were able to demonstrate with astounding facility that the railroads should be in a prosperous condition, but, strange to say, the actual condition confounded the theorists. Now that the petition of the railroads has been renewed they may look forward with more

confidence to a favorable issue, inasmuch as their financial reports absolutely demonstrate that while their operating revenues have been constantly decreasing for months, their operating expenses have just as constantly increased.

VERDICT MUST BE EXPEDITIOUS

[From the Philadelphia Press]

The Interstate Commerce Commission has again before it the case of the railroads. It has the solving of the problem of whether it will do real and substantial justice, or whether it will again be led astray by theory and chimerical schemes of economy. It has the opportunity to act promptly and well, and so save financial conditions in the United States. It will not be sufficient to decide right after a long interval of time; the verdict must be expeditious if a disastrous situation is to be avoided. This is not a time for the commission to go into the history of railroad financiering and to dig up and exploit any errors of the past. There is far too much at stake in the present. It is time to realize to the full how many different elements are involved in the case of the railroads, and that the question of doing justice to them extends even to the protection of the small depositors in the savings banks of the country. It is to be hoped that in this new case before them the commission will not sit at the feet of Mr. Brandeis, of Boston, and seek from him the path to take. It is a crisis that needs no oracular advice from any apostle of a theoretical economy. The commission has a duty to perform. That duty it should meet in square man fashion, fearless alike of the clamor of the mob and the pleading of the advocate. And first of all it should recognize the extent of the question that is before it.

SHOULD BE EX-BRANDEIS

[From the Albany Journal]

More light has come to the Interstate Commerce Commission. It has granted, with unusual promptness, the appeal of the eastern railroads for a reopening of the rate case which was decided mostly against them shortly before the war began. There is a report that the organizations of shippers which opposed the original application will again make opposition. If they do, they will show themselves even more unreasonable than before, since now there is constant effort to advance the prices of most things that are shipped. The rehearing should be before the commission minus Brandeis, and the decision should be such as will meet the requirements of a condition embarrassing to the railroads, which is now more or less aggravated by the indirect effects of the war.

THE COMMISSION ON TRIAL

[From the New York World]

The president's letter on the railroad situation showed that he was personally convinced of the need of higher rates. . . . But what then? Another year or more of figuring and argument and fiddling around to no certain consequence this way or that? Another year of uncertainty among shippers and in the markets for railroad securities? Another year of that colossal exhibition of administrative vacillation which month after month preceded the inane decision rendered a few weeks ago?

One thing is evident. The railroads are entitled to greater elasticity in the control of their income. They are subjected to quick changes in traffic and credit conditions, as from this unforeseeable war. They should be enabled to adjust themselves to these changes with equal rapidity.

If through the Interstate Commission the roads are not so enabled readily to readjust themselves, it is no body to exercise the rate-fixing power. It should know from month to month what are the just needs of the roads or their unjust charges. If it does not know, or if it is not able to decide promptly on what it does know, it is out of place where it is. The present commission is on trial before the country as a body competent to perform the duties imposed upon it.

COMMISSION SHOULD FACE ABOUT

[From the Philadelphia Public Ledger]

Europe's war has driven European investors to the necessity of selling billions of American railroad securities provided our exchanges open and give them the opportunity to do so. This means that for years to come it will be impossible for American railroads to procure one dollar of capital anywhere in Europe.

The hour has come in this war-troubled day when the Interstate Commerce Commission should face about and advance freight rates without argument. Nothing that the president could do, nothing that congress could do, nothing that all our bankers and trades bodies combined could do, would so instantly lift every business to a higher plane of prosperity as a quick rise in rates. It would be notice to the whole world that the United States means in this crisis to preserve its institutions intact and to permit them to live in prosperity. Such notice would do what nothing else will be able to do toward persuading Europe to keep our securities. The Interstate Commerce Commission can now deliver a fatal blow to American trade, or it can by an act of patriotic duty in one day start a thousand industries to humming and send back to work many thousand idle men.

COMMISSION SHOULD ACT AT ONCE

[From The Economist, Chicago]

Thirty-five railroad systems have asked the Interstate Commerce Commission for a rehearing on the application for a five per cent increase in rates. What they want is not the half-loaf that the commission gave them in its recent decision, but the whole thing. They are entitled to it, and failure to give it to them is likely to entail on the whole country a great deal of trouble. There was reason enough for the increase before the European war came on, and that reason has been doubled, or more likely multiplied by 10, for one cannot measure the possible difficulties that the roads will have in their finances. As to the operation of the properties the roads say that for the year ending June 30, 1914, as compared with the year ending June 30, 1913, there was a decrease in total operating revenues of \$44,700,000, while operating expenses increased \$23,300,000, and a decrease in operating income of approximately \$73,700,000, notwithstanding an increased property investment. In addition to these facts is the certainty that high rates for money will have to be paid for a long time yet, and the roads have obligations of over \$500,000,000 maturing in the next 15 months. The president has spoken for the roads, the public is beginning to see the merits of the case, and the Interstate Commerce Commission should act at once.

INCREASE SHOULD GO TO RAILWAYS

[From the Houston Post]

The possibility that an advance in rates may have to be made is reason enough why the added burden of a tax on freights should not be laid upon railroads and shippers. One of the immediate causes of business depression throughout the country is the plight of the transportation lines. They have abandoned hundreds of trains and otherwise reduced their service. They have curtailed operations in their shops and offices, halted betterments and laid off tens of thousands of employees. It is a condition confronting them, not a theory. Their credit is badly impaired because of the lack of earnings to meet their financial engagements. Their tonnage has decreased. If there must be any increase of freight rates, it should by all means go to the companies so that they may resume as far as possible the operation of their properties to the limit of efficiency and re-employ as many of their idle men as possible.

NECESSITY FOR RELIEF EXISTS

[From the Iron Age, New York]

The necessity exists, as admitted by President Wilson on September 9 to a committee of railroad executives, of some measure affording relief to the railroads of the country at this time of contraction in railroad revenues. The proper way in

which to afford such relief would be by giving them permission to advance their freight rates. It is to be hoped that the hearing will be granted and that an early and favorable decision will be rendered. The railroads are in practically as serious a condition as the government so far as revenues are concerned and imperatively need to have their interests considered. It would have been most unfortunate indeed if such a complication had been injected into the situation as the imposition of a tax on freights.

THE COMMON LOT

[From the San Antonio Express]

It is the common lot of all enterprise at present in this country to have to contend with the question of capital, credits and commercial interruption. We take it that the eastern roads will have to produce overwhelmingly powerful proof that their credit largely depends on the grant of the desired increase before they can persuade the commission to alter its ruling, which—it is remembered—called the roads' attention to the remedy that lies in cutting out useless extravagances of operation and in increasing passenger rates. For it is not unreasonable to remind that the tightness is but temporary, that it is agreed on all hands that the current stringency will be succeeded by a record era of trade prosperity—an era in which, of necessity, the roads would have a tremendous share. Thus if there is any possible way out of this tight situation for the roads, if there is any way to tide over the straitness until the wheels of commerce shall turn in this country more freely than ever before, without asking the people to supply the funds at this time, certainly the roads should adopt that more just and patriotic expedient.

A NEW CASE

[From the Dallas News]

While the press despatches use the word "rehearing" in speaking of the decision of the Interstate Commerce Commission to grant the latest request of the eastern railroads, the proceeding intended is not, strictly speaking, a rehearing. It does not intend, evidently, to reopen the case adjudicated. What it does intend is to determine whether conditions coming on since that decision was made render it necessary to afford these railroads further relief. The chief and most immediate problem confronting the railroads is that of refunding bonds about to mature. In the present state of the money market, as well as in the state that is to be expected for some time to come, they will have to pay a higher price for financial accommodation than it would have been necessary to pay a few months ago. This will add to their annual expenses just as certainly as an increase of wages would. But what probably chiefly gives rise to the anxieties of the railroads is the greater reluctance to lend to them. Lenders knowing, as of course they do, the increasing predicament of the railroads, feel less certain of the security which their bonds offer. It is the fear of receiverships, and it will undoubtedly be the object of the railroads to show that a further advance in rates is necessary to remove this fear. The commission will hear a new case, and not rehear an old one.

BRANDEIS SHOULD BE ELIMINATED

[From the Salt Lake Tribune]

The Interstate Commerce Commission has decided to reopen the eastern advance rate case. The shippers' organizations, which have previously fought the increases, will be represented by counsel, and the question of right or wrong will be thoroughly ventilated. Both sides are entitled to a hearing before the commission finally makes up its mind as to the necessity of granting the increases asked. This time, however, Lawyer Brandeis should be eliminated and the controversy settled upon its merits, without taking into consideration the fads, fancies and foibles of the Boston reformer. The railroads have been hard hit by the depression of the past year or two and the European war has put the finishing touches upon an already deplorable condition in the business of the carriers. The shelving of the railroad securities bill was an indication that the administration feared disaster would follow, placing the railroads at a still

further disadvantage. The fact that the rate cases are to be reopened may be taken as proof that President Wilson believes that the railroads are justified in making their request and that he will not be disappointed if the request is granted.

A LOOK INWARD

[From the Cleveland Leader]

Important representations must have been made to the Interstate Commerce Commission to induce it to consent to a rehearing of the plea of the railroads for permission to increase their freight rates by five per cent. That the ultimate consumer would in the end be compelled to pay the increase is well understood by the commissioners. The railroads will not be permitted, nor do they expect, to go again over the ground covered in the last hearing, despite the fast-growing impression that the commission has borne down upon them with undue severity. They will be limited to the presentation of facts and circumstances which have arisen since the last proceedings—since the democratic tariff law went into effect and before the war in Europe had begun to produce much effect upon this country. One of the facts newly ascertained is an immense falling off in railroad net earnings. In spite of an increase in property investment it amounted to \$73,700,000 for the eastern railroads alone. It would have been much greater if drastic economies had not been enforced. And the stockholders have not suffered alone. Purchases of supplies have been cut down, affecting the concerns producing them even to the extent of suspending dividends and confessing bankruptcy. Trains have been withdrawn and men have been laid off work because they could not be employed without loss. All this affects the general public. If the railroads are suffering other branches of industry must be suffering also. What is the cause? The chances are that the forthcoming rate hearing before the Interstate Commerce Commission will have a strong and peculiar political interest for every citizen of the United States.

ADVICE REPUDIATED

[From the Albany Journal]

When the Interstate Commerce Commission some weeks ago handed down its long delayed decision on the application of the eastern railroads for permission to increase freight rates, it granted little of what was asked but gave a great deal of advice as to how by other means revenue could be increased. Among other things, it suggested that charges should be made for "spotting" cars; that is, for placing cars on tracks maintained by shippers.

Having received this advice, the railroads had reason to believe that if they acted upon it, their action would be forthwith sanctioned by the commission. Accordingly, they promptly filed a schedule of charges for "spotting" of cars, expecting that the commission would approve it. Instead, the commission received protests from shippers and then suspended the operation of the schedules filed upon its advice, until next March. In the meantime the protesting shippers are to be heard. Eventually, the schedules may be approved, or not. In view of this development, one is more than ever before at a loss to understand the mental processes of the commission. When advice is given in definite form, it is to be believed that the adviser is convinced that action upon it is in order; that there remains no doubt in his mind as to the merit of his suggestion. Yet the commission, having told the railroads what they ought to do, does not permit them to do it, but decides that the proposed action shall be debated during a long time between those who have accepted the commission's advice and those who are moved by self-interest to offer opposition. Such methods of the commission enable it to keep the railroads indefinitely on the anxious seat, while their financial condition is steadily deteriorating. At the same time, when the administration sees that it needs additional revenue because its "tariff for revenue only" is proving to be a tariff for deficit, a bill is promptly prepared which imposes a tax upon everything in sight. No opportunity is given for protest. "The government needs the money," is offered as

a sufficient reason for the imposition of extraordinary taxes aggregating \$105,000,000. That the railroads, too, need more money to give the service that is expected and demanded from them, and to keep their credit sound, is not regarded as an impressive argument.

GOVERNMENT SHOULD UNDO THE WRONG

[From the Buffalo Courier]

The roads east of the Mississippi last year petitioned for authority to raise their freight rates. These had remained stationary while literally everything related to operation and maintenance had largely increased in cost. For an inexcusably long time the Interstate Commerce Commission dwelt with this application, extending investigation in uncalled-for directions, then finally giving a decision disappointing to the transportation companies and condemned by such of the people as have an intelligent understanding of the conditions. . . . Instead of impartially judging the merits of the request and its bearing on public welfare, the majority of the commissioners, no one of them a practical railroad man, assumed to lecture the managers on how the roads should be run with impracticable and illogical suggestions. The transportation interests and the interests of business at large are so interdependent that unless the railroads prosper no general prosperity can exist. The government should consider this incontestable proposition at once. It should undo the wrong committed by its blundering agent, the Interstate Commerce Commission. . . .

TONIC SHOULD BE ADMINISTERED AT ONCE

[From the St. Joseph, Mo., Gazette]

The Gazette is in hearty sympathy with the effort being made by American railway men to have justice done the transportation lines of the country. For years now we have been fighting the railroads. Their every act has been closely scrutinized by government agents, and no forward step has been made by any one of them without having first gained the consent of the government to the proposed action. This period of investigation was, perhaps, necessary in order to place the roads in a proper light before the public, but in our enthusiasm to see that justice was done there is grave question whether we have gone too far. This newspaper does not believe that any country can be prosperous for long while its transportation lines are in the condition now occupied by American railways. Permit them to charge rates sufficiently high to make them prosperous, to enable them to meet their just obligations, and to go on with their improvement plans, and every line of business in the country will immediately feel the impulse of their good fortune. If, however, the request of the roads is not granted we shall see conditions go from bad to worse until business becomes paralyzed, the trust funds of the people invested in railroad securities greatly depreciate in value, and millions of men be thrown out of employment. The tonic needed by the roads should be administered at once.

CRISIS OF THE RAILWAYS

[From the Independent]

The railways of the United States are facing a crisis. It is a crisis not brought on by the great war, but rendered immeasurably more acute by it. It is more than a crisis for the railways, it is a crisis for the American people as a whole. In the words of President Wilson, "the interest of the producer, the shipper, the merchant, the investor, the financier and the whole public in the proper maintenance and complete efficiency of the railways is . . . manifest. They are indispensable to our whole economic life." In the prosperity of the railways we all share. In their ill fortune we all suffer. It is a time for the Interstate Commerce Commission to consider gravely whether it shall not reopen the just-decided rate case and, in its reconsideration, give the railways the benefit of every doubt on behalf of their plea for increased revenue. It is a time when, in the words of President Wilson, "we must all stand as one to see justice done and all fair assistance rendered and rendered ungrudgingly."

COMMISSION CONTROL ON ITS TRIAL

By W. M. ACWORTH

I am invited to say what I think of the recent 5 Per Cent Rate Advance Case. Let me begin by making my own personal attitude clear. Three or four years ago I started to write a continuation of my little book, "Elements of Railway Economics." Several of its chapters as they were written appeared in the *Railway Age Gazette*. One chapter concluded in these words: "A law court is not the proper body to decide questions of railway rates. On the other side of the Atlantic they seem to be gradually working out a system of regulation much more logical in theory, and likely in the long run to be much more satisfactory in practice." I then held the belief—justified I think by the then evidence—that commission control was going to afford a satisfactory solution of the problem. And I accordingly went on to sketch its gradual development in the United States, showing how commissions and legislators had sown their wild oats, and how the railroads had come, first reluctantly to submit to, and then almost to welcome, reasonable regulation.

And then two years ago my writing abruptly stopped; for the facts unfortunately ceased to fit the theory on which I was proceeding. Legislators refused to be guided by experts, and passed two cent fare laws, full crew laws, and the like, by scores, for reasons quite other than those of general public interest. Commissions failed to become more expert. They still regarded it as their duty to establish, not just and reasonable rates, but low rates. Some of them even, in defiance of the spirit of the Constitution, which forbids any state to lay any imposts or duties on imports, manipulated local rates so as to prejudice the freighters outside their own state. There remained still the Interstate Commerce Commission. And to that commission, strengthened in authority, in numbers, and in personnel, one could surely look to uphold the credit of commission control. And now comes the decision of that commission in a case, not only the most important that has ever been submitted to it, but surely the most important in the magnitude of the interests involved that ever has been submitted in the world's history to any tribunal. That the decision will be a landmark in the story of the relations between railways and governments, I have no doubt. That it will inspire confidence in commission control as a system—can anyone hope?

I am not going to attempt to criticize the decision in detail; as it seems to me details are out of place in a case going down to the whole financial basis of the railroads of America. Three years before the commission inquired into the same question, whether an advance of rates was required. Though they came, as I believe, to a wrong conclusion, they dealt with the matter in a broad and statesmanlike manner. They based their judgment that an increase was not required on the view that new net revenue was not then needed, and on the expectation that neither wages nor cost of supplies would much advance; and added that, if they were proved wrong, they would not hesitate to give their sanction to increases that would be reasonable. In 1914 the commission finds that the expectations of its predecessors of 1911 were wrong. Wages and fuel costs have largely increased, and "the net operating income of the railroads in official classification territory, taken as a whole, is smaller than is demanded in the interests of both the general public and the railroads." But thereupon the commission decide that the railroads in official classification territory, taken as a whole, shall not receive at their hands any increase of income whatever.

The commissioners of 1911 were bad prophets. But fate was at least kinder to them than to the prophets of 1914, who—on the very day on which the stock exchanges in New York and London closed their doors, and two days before Germany declared war on France and Russia—put out the opinion, "Shortly after the commencement of this proceeding there began another period of depression from which we

appear now to be recovering." . . . "Subsequent developments have shown that there was little foundation for any such view" as that "carriers would encounter great difficulty in renewing their maturing short term notes and other obligations. With the growing ease in the money markets this difficulty has largely disappeared."

But in truth this was not a case either for detail or for prophecy. In England our courts take judicial cognizance, as it is called, of certain facts that do not need to be proved. They take it for granted, for instance, that the sun goes around the world; that New York time is always five hours behind London; that the United States since 1776 has been an independent nation, and other similar facts that are part of our common consciousness. And so, it seems to me, the commission might have taken judicial cognizance of the elemental facts of the railway situation. We all know, for example, that American railways have been built and operated hitherto with an economy unknown in older countries; but that of recent years the standard of construction, and the standard of operation have been rapidly raised, implying the expenditure of vast additional capital and a much larger proportion of income. We know that freight rates the lowest in the world have gone down rather than up of recent years. We know that operating costs have increased faster owing to increased prices than could possibly be offset by increased economies. We know, to put it in the broadest possible way, that it cannot in the long run be possible, in a country where \$1 purchases less than almost anywhere else in the world, to give the European standard of service at the old American standard of price. We—including the commission—cannot help having all these things at the back of our heads, and 1,000 pages of statistical tables do nothing more than confirm—though they do abundantly confirm—our pre-existing impressions. And yet the answer of the commission is a refusal, and ten items of paternal advice.

One would have thought the natural course of the commission, having found the net revenue inadequate, would have been to go on to say: "Take then, as an interim measure, this 5 per cent increase for which you ask, for you have abundantly discharged the burden of proof laid upon you that your rates as a whole are too low. But the general increase must of course be subject to the right of any individual complainant to show that his case is an exception; and, if that is proved, the money must of course be refunded. But we do not think that a general 5 per cent increase is the best thing that can be done. Let us all get together, commission, railroads and freighters, and see if we cannot work out a better scheme, it being understood that the commission has made up its mind, on the one hand, that the railroads must have increased revenues, and therefore increased rates; and, on the other hand, that no trade and no locality must be unjustly discriminated against."

But, far from taking this course, the commission have entrenched themselves in a semi-judicial dignity against "the general impropriety" of what they call "the campaign of publicity." Why there was any impropriety in the action of the Traffic Association which "offered to deluge the commission's offices with thousands of telegrams"—presumably to declare that, in the opinion of the members of the association, the proposed increases were just and reasonable—it is difficult to understand. I had always hitherto believed that the great advantage of a commission of the American type over our purely judicial commission in England was precisely that with you the commission was responsive to public opinion, both guiding it and being guided by it in turn; and was not confined to the consideration of sworn evidence produced in court. In our procedure there is no method by which the interests of the public at large can be brought before the court. But, if with you the public at large, who are expressing their opinion through hundreds of leading articles or through thousands of telegrams, are to be refused

a hearing, what is the advantage in the commission being only "semi-judicial"?

I have long thought that the proper method of control over railway rates is that a body of experts, such as the commission, should consider the question, and, instead of deciding it, should publicly give their advice to a cabinet minister, and that he should then act on his own responsibility, being himself in turn responsible to Parliament. Under our form of government in England there is no difficulty in establishing machinery of this kind. But it would, I imagine, be impossible under your constitution with its rigid limitations of the spheres of legislative, executive and judicial action. But you will, I think, have to face the question, how the statesmanship of the country can be brought to bear on the railway problem; for this question the Interstate Commerce Commission by their latest decision has raised in so acute a form that it cannot now be evaded.

RAILWAY SIGNAL ASSOCIATION

The annual meeting of this Association was held at Bluff Point, N. Y., on Lake Champlain, last week, and the proceedings of the first day were reported in the *Railway Age Gazette*, September 25, page 564. On the second day, Wednesday, the first business was the report of Committee No. 3, on power interlocking, F. B. Wiegand, chairman. This committee presented a code of specifications for incandescent electric lamps, which, after brief discussion, was accepted as in the nature of a progress report. A code of specifications for vitrified clay conduit, presented by the committee, was approved and ordered submitted to letter ballot. A standard cartridge enclosed fuse was ordered to letter ballot.

The report of Committee No. 4, on automatic block signalling, was presented by A. R. Fugina, vice-chairman. A code of specifications for caustic soda primary battery, after a very brief discussion, was accepted for reference to letter ballot.

Committee No. 4 presented revisions of a number of paragraphs of the Association's standard specifications for high-way crossing bells. The views of the committee expressed in this report were criticised and were discussed at some length; but the specifications were finally accepted as presented.

On the subject of typical circuit plans for automatic block signalling, this committee was unable to agree upon a recommendation, wide differences of opinion developing among the members. A sub-committee, of which G. H. Dryden is chairman, made a thorough study of the subject and prepared typical circuit plans for single track automatic signalling. These were not acted on by the whole committee, but Mr. Dryden presented to the meeting a minority report, accompanied by a plan for single-track signalling, which differs materially from that of any system now in service. There was no discussion of this report, members generally expressing the desire to read it again before expressing themselves on the views of the sub-committee. The subject will be discussed at the March meeting (in Chicago).

Committee No. 6, on standard designs and nomenclature, J. C. Mock, chairman, presented standard drawings for mounting mechanism cases on bracket posts; mechanical dwarf signals; switch rod insulation; a double lever stand to be used on table or wall in offices, and other details; also a number of designs which had been presented at the March and the May meetings. All of these were accepted and ordered to letter ballot, except that the spectacle of the dwarf signal was referred back to the committee for certain alterations, and except also that the handles of the lever stand (drawing No. 1197) were ordered to be made two inches longer than shown in the plan presented by the committee. Eight existing standard designs which had been

slightly modified by the committee were accepted and ordered to letter ballot.

On a number of other designs this committee proposes to send out letter ballots for information before making final recommendations.

This committee again presented its report, embodying an elaborate system of symbols and nomenclature for use in the preparation of working drawings, which was very briefly discussed at the meeting last May. This code of symbols introduces a radical change in the general practice on all railroads; but, evidently, it had been carefully examined by the members, and after very brief discussion it was adopted unanimously, to be sent to letter ballot.

Committee No. 8, C. H. Morrison, chairman, presented descriptive accounts of installations of automatic block signals on railroads where trains are propelled by electric power, these descriptions filling about 40 pages. These were accepted by the association as historical data to be embodied in the proceedings; and also perhaps, to be printed, with similar matter presented before now, in a separate volume.

Specifications for transformer oil, for petrolatum for use in impedance bonds and for alternating current electric generator, after slight corrections, were accepted and ordered to letter ballot. The association endorsed the view of the committee that oil should not be used in impedance bonds.

In connection with the specifications for a generator the committee was authorized to make additions, before publication, to make the specifications correspond with those adopted, or to be adopted, by the American Institute of Electrical Engineers.

The meeting approved certain slight changes which are to be made in the specifications for overhead crossings of electric wires. Changes in the specifications for track relays, after correction of typographical errors, were adopted and ordered sent to letter ballot.

THIRD DAY

On Thursday the meeting took up the report of Committee No. 2, on mechanical interlocking, C. J. Kelloway, chairman. Standard Drawing No. 1207, for leadouts from towers, with low bearings, was adopted and ordered to letter ballot. The same action was taken on six proposed standards for derails, which had been presented at the May meeting. These, however, are treated as examples of good practice, not standards to be printed in the manual.

The changes which had been made in the specifications for mechanical interlocking construction were approved, after a large number of errors in details had been corrected.

This report presented a list of requirements for the proper installation of interlocking at drawbridges, embodying a number of additions to what had been presented on this subject at former meetings. After a long discussion these requirements were accepted as a progress report.

A special committee, J. B. Latimer, chairman, which had been directed to prepare a form of contract to be used in establishing signals at junctions, crossings or other places where two roads are interested, reported that, before anything useful could be done, it would be necessary to adopt a better standard table of operated units and the values to be assigned to each, than is now available; and a list prescribing such values was presented. Objection was made to the list presented on the ground that it went too much into detail. In the great majority of cases where there is a joint interlocking the division of the cost on the basis of one-half to each company would not be far out of the way, and this simple plan has a great advantage over the complications of a set of values based on distinctions carried out to the last small detail. After a long discussion, however, the report was accepted, the word "points" being substituted for "units" as the name to be used in assigning the

values as prescribed by the committee. The table will be referred to letter ballot.

Committee No. 3, on manual block signalling, Geo. S. Pfisterer, chairman, presented revisions of the rules governing maintenance of block signals, which were adopted and ordered to letter ballot.

It was voted to recommend to the American Railway Association certain rules, discussed at a previous meeting, relative to the use of caution cards for moving trains past interlocked signals when apparatus is out of order.

The report of the committee on signalling requirements for electric railways was accepted as a progress report. Further conferences with Committee No. 1, on signalling practice, will be necessary before decisive action can be taken by this committee.

The committee on selection of place for the next meeting, R. E. Trout, chairman, named Salt Lake City as the place, and the date September 21, 1915; and this report was unanimously adopted by the meeting.

The election of officers for the ensuing year, which was by letter ballot, resulted as follows: For president, Thomas S. Stevens, Atchison, Topeka & Santa Fe; for second vice-president (the present second vice-president, W. J. Eck, becomes first vice-president), C. A. Dunham, Great Northern; for secretary (eighth year), C. C. Rosenberg, Bethlehem, Pa.

REPORT ON DERAILMENT AT ATTICA, IND.

The Interstate Commerce Commission has issued a pamphlet, not dated, giving the conclusions of Chief Inspector H. W. Belnap on the derailment of eastbound passenger train No. 4, of the Wabash Railroad, at Attica, Ind., April 5, last, when three persons were killed. As reported at the time, this derailment was caused by running the train on to a bridge which had been weakened by a previous derailment. This first derailment occurred at a frog, and the present report gives a view of the track, in which this frog is seen, but there is no study or explanation of the cause. The train, a freight train, was moving west. The car derailed in this train, the twelfth car, ran against the left or south batter post of the bridge and weakened it seriously. Subsequently the freight engine had been backed over the bridge; and as this engine went over safely, and as the passenger engine was lighter than the freight, the passenger train was allowed to move over the bridge at about four miles an hour; but it broke through when on the span of which the weakened end post was a part.

James E. Howard, engineer of the commission, examined the bridge, and he says that, while the passenger engine was lighter than the freight, it, with its adjacent car, caused a greater stress on the weakened post than did the freight engine and one car, because it was headed eastward. He calculates that when the passenger engine was on the weakened span the load on the end post was 186,800 lb. and that when the freight engine was on the same span, this stress was 147,800 lb.

It was reported at the time that the responsibility for allowing the passenger train to enter upon the weakened bridge was chargeable to the track supervisor, but Mr. Belnap says that, "while this man was apparently in charge, he did not personally notify the despatcher that it was safe for the passenger train to proceed over the bridge." After reviewing the testimony, Mr. Belnap says that, owing to the conflict in the evidence, responsibility for permitting the bridge to be used in its weakened condition cannot be definitely placed. The conductor of the freight, the station telegrapher and others testified at the inquiry, but the discrepancies in their testimony are not cleared up in the report.

Engineer Howard says that the weakened condition of the bridge was clearly manifest and of a nature so serious that its dangerous condition should have been realized and traffic

immediately suspended. This opinion appears to be based on the evidence of a photograph showing ruptures and distortion of the batter post, but this photograph is not reproduced. There is a halftone reproduction of a view of the bridge, but the details are not sufficiently distinct to enable the observer to form an intelligent opinion.

The abstract of the testimony of the track supervisor indicates that he looked at the batter post and saw that it was "bent about 6 in. to the south," and yet he seems to have been so much influenced by the fact that the freight engine had passed over the bridge in safety that he took no measures to forbid the passage of the passenger train.

ENGINEMEN'S EXPERIENCES—MAN FAILURES*

By JOSEPH D. CLYDE

I learned a lesson when I had been running about two and a half years that has made me watch my hand ever since. I was running a little ten-wheeler on the Parral branch of the old Mexican Central, and was called one afternoon for an extra south. When we left Parral I had thirty minutes to go to Aristole for No. 412, the northbound passenger train, and as we had about seven kilometers (4½ miles) of pretty good grade right out of Parral, our thirty minutes allowed just about time to go to Aristole (which is fourteen kilometers from Parral) without exceeding speed restrictions.

We had made about ten kilometers when I sighted a bunch of horses on a road crossing. When I blew for the crossing the horses started to run; but one of them jumped into a cattle guard and got fast between the slats. I stopped all right, before striking him; and it took the whole crew to pry him out. We used 12 minutes doing this and getting under way again.

All of us forgot No. 412 in the meanwhile; and we proceeded on down the hill. Just about a mile from Aristole I came to my senses and saw I was on 412's time. I set the air in emergency and blew for brakes; and just at that moment 412 shot out of a cut and into us. The outcome was about \$20,000 damage to the engines and equipment, and the loss of three lives, a man, a woman and a little girl, all of them passengers on No. 412.

It also made both myself and the conductor fugitives from the rather questionable justice that was dealt out in Mexico at that time. I don't think that either one of us—the conductor or myself—has ever overlooked his hand since.

To show that I profited by the foregoing incident I will relate another. I was working for the old National out of Mexico City about ten months after my trouble on the Parral branch, and was on a passenger run that left the main line at Toluca Junction and went to Acambaro. We made each way a day. I was coming south one night and was running about fifty minutes late. About one mile out of Toluca the track swung around a curve on to about half a mile of straight line. As I came around this curve I reached up to blow for the town and just glanced at the track as the engine took the straight line, and saw an object lying on the right hand rail. I shot the works into her and got stopped with the pilot just touching an old style coupler knuckle (the kind that has the slot cut in the middle) which had been driven down over the rail, forming a derailer. The track at this point was on a fill about 75 ft. high; so you can see what would have taken place if I had been thinking about my past life, or something besides the job I was on. I can't take all the credit, though, because I had an electric headlight.

This was found to be a deliberate attempt to ditch the train, and the perpetrators were caught and dealt with according to the quickest method; that was, letting the rurales in for a little cheap target practice.

So just make a resolve, brothers, when you register out, that "Safety First" is all you are going to think about till your trip is completed.

*This is the second of a series of articles, made up of useful hints to locomotive runners, which were written in connection with the prize competition of several months ago. The first of this series was printed in the issue of September 25, 1914, page 571.—EDITOR.

RAILWAY AFFAIRS IN OTHER COUNTRIES

The annual Korean consular report states that during 1913 133.2 miles of railway were opened in Korea, making the total length of line now open to traffic about 970 miles. A new line is to be opened in October or November, and some extension work is now being planned. During 1913 the Korean railways carried 4,143,803 passengers and 1,425,246 tons of freight, an increase of 1,695,075 passengers and 293,474 tons over 1912. A large railway hotel is being erected at Seoul.

* * *

The Journal des Transports, in making a study of the effects of syndicalism on French railway labor problems, has compiled the following table, giving the total number of employees on the various railways of France, with the number and percentage of those who are members of the National Railway Syndicate:

Railway	Number of syndicalists	Total number of employees	Percentage of syndicalists
State	8,783	73,127	9 per cent
Est	1,139	51,471	2.2 per cent
Midi	802	26,268	3.1 per cent
Nord	2,347	56,546	4 per cent
Orléans	1,083	49,600	2.2 per cent
Paris-Lyons-Mediterranean	2,349	86,124	2.7 per cent

It will be noted that both the number and the proportion of syndicalists are considerably greater on the State railway than on the lines of private ownership, but that even in this instance the proportion of syndicalists is far too small to exercise a controlling influence. It is stated, moreover, that the majority of the syndicalists are shop employees or newcomers to the service.

* * *

The first electrification of a steam railway within the polar zone has been practically completed by the Swedish government on the Kiruna-Riksgränsen section of the line from Lulea, Sweden, on the Gulf of Bothnia, across the Scandinavian peninsula, to Narvik, Norway, on the Atlantic ocean, 293 miles. Electrification was determined upon for the section from Kiruna, which is about 87 miles north of the Arctic circle, to Riksgränsen, on the border line between Sweden and Norway, a distance of 80 miles, for the purpose of increasing the capacity of the line in preference to double-tracking. Practically the only freight business is the transportation of iron ore, of which 3,000,000 tons was hauled in 1913 by steam. It was desired to increase the capacity to 5,000,000 tons a year and electricity was adopted to permit heavier trains and an average increase of about 25 per cent in speed. The large amount of available water power and the scarcity of coal were also important factors. The electrified line is through an uninhabited country where temperatures of from 25 to 35 deg. below zero are common in January and February. Although two years was allowed in the contract for completing the work the actual time available for work, on account of weather conditions, was only seven months. The power station is located at Porjus Falls, 74 miles south of Kiruna, and power is transmitted at 80,000 volts by a tower transmission line to four substations where the potential is stepped down to 15,000 volts for the contact trolley line. Electric locomotives hauling passenger trains of 200 metric tons and ore trains of 1,855 tons will be used, and the contract specifies speeds of 31 miles an hour over level track and 18.6 miles an hour on 1 per cent grades. The equipment will include 2 passenger and 13 freight locomotives.

* * *

It will be remembered that the railways of Great Britain are now being operated by the government under a board of control consisting of several general managers, headed by H. A. Walker of the London & South-Western, the latter being responsible to the government rather than to the directors and stockholders. The method of compensation for operation under this plan is shown by the following announcement issued by the Board of Trade:

"The Regulation of the Forces Act, 1871, under which His Majesty's Government have taken possession of most of the railroads of Great Britain, provides that full compensation shall be

paid to the owners of the railroads for any loss or injury they may have sustained thereby, the amount of such compensation to be settled by agreement, or, if necessary, by arbitration.

"His Majesty's Government have agreed with the railway companies concerned that, subject to the undermentioned condition, the compensation to be paid them shall be the sum by which the aggregate net receipts of their railways for the period during which the government are in possession of them fall short of the aggregate net receipts for the corresponding period of 1913. If, however, the net receipts of the companies for the first half of 1914 were less than the net receipts for the first half of 1913, the sum payable is to be reduced in the same proportion. This sum, together with the net receipts of the railway companies taken over, is to be distributed among those companies in proportion to the net receipts of each company during the period with which comparison is made.

"The compensation to be paid under this arrangement will cover all special services, such as those in connection with military and naval transport, rendered to the government by the railway companies concerned, and it will therefore be unnecessary to make any payments in respect of such transport on the railways taken over."

The Statist, of London, a leading authority, is under the impression "that the net earnings guaranteed to the railways by the government during the time the railways are worked by the state will not be much less than were the net earnings in 1913, and that, consequently, railway shareholders will not suffer any serious loss of dividend."

HOW CAN ENGINEERS BEST UTILIZE THE TECHNICAL JOURNALS?*

By JOHN W. ALVORD

Consulting Engineer, Chicago

That we cannot keep abreast of the times without reading the engineering journals is obvious. That if we carefully read all the engineering journals in our chosen specialty we shall have no time left to earn a living is easily capable of demonstration. What, then, is the proper attitude to adopt toward this ever increasing flood of information that pours in upon us so relentlessly? It we look about to see how our fellow engineers solve this matter we shall find a great variety of attitudes toward the problem. Some engineers simply do not take engineering journals, reading one occasionally here and there as opportunity offers. Others take all they can afford and let them pile up around the office, often unopened, and unused. Others still limit themselves to a select few, which they carefully bind and shelve. Still others read journals when they can, and throw them away when they move on.

The problem of the engineer with his technical paper is much affected by his age, station, and aim in life. To the man who is engineering only to get money and more money, the engineering journal is a newspaper, in which he may notice mainly where there are better jobs than his own that may be sought after and perhaps obtained. To the man who is anxious to fit himself for something better, it is an opportunity for a great variety of study. To the young engineer the engineering journal, properly read and noted, is a part of a post-graduate course in engineering. To the middle-aged man, it is a mine of data, bearing in all sorts of ways on his work. To the mature specialist only does it begin to become burdensome by its repetition of experience and its volume of matter on subjects which have already, to him at least, been well digested.

The young engineer and the college graduate need, most of all, practical experience. It is safe to say that engineering literature will never have any proper perspective for him until he has been connected in some capacity with engineering work himself, be it in ever so modest a capacity. With the actual doing of engineering work, however, should come contemporaneously the reading of technical journals, particularly along

the lines in which he is working. Nothing can be more instructive, broadening and enlightening to a man doing a particular kind of work than reading about similar work at the same time. It follows, therefore, that the young engineer should, as early as possible, take at least one good, first-class engineering journal, and own it himself; bind it, if he can afford to, but lay it away in an orderly manner, in any event. If he can afford two journals so much the better, especially if they are selected so as to widen his outlook.

In the matter of indexing for the young engineer, much must be left to the judgment and taste of the individual. The engineering indexes are very complete and useful in these modern days. The mind itself is a wonderful indexer. It is safe to say that the average intelligent man reading an article which impresses him as useful and valuable can, without effort, remember for many years after the name of the journal and the approximate year in which the article appeared.

It is probably not wise for the young engineer to indulge extensively in card indexes and filing systems for topically arranging his available engineering journal articles. Few men know very early in life where fate and interest will land their future attention. Filing systems and special indexes are expensive and time consuming, and when indulged in without definite aim nearly always quickly become too voluminous and thereby useless.

If any suggestions are made along this line, it would be to start a loose leaf letter size (8½ in. x 11 in. page) notebook, and note in it, with separate pages for separate subjects, only what appears to be extremely useful, either in exceedingly brief abstracts from engineering articles or diagrams, costs, etc. These notes will be most useful if they are confined to that kind of work in which the compiler is immediately engaged, and has on his mind at the time, or at the most, work very similar to his own, which has perhaps had his personal inspection.

To the man in early middle life, actively engaged in his profession, the problem with the technical journal is the lack of time. Absorbed in a multitude of responsibilities, how shall he derive any useful good from the multitude of journals which his more ample income can readily afford, but which pile high on his table after every brief absence from the office. The average editor can judge of a technical article with only a brief inspection. The working engineer who has had some experience with technical literature can form the same habit, and save much time.

Much light is thrown on engineering literature by personal or general acquaintance with the author. One can more fully appreciate what an author says when he knows fairly well what the author's experience has been. All men have their high strong ground, their less trodden side slopes, and their twilight zone of knowledge, and they should not be blindly accepted as authority in all of the fields in which they sometimes venture an opinion.

What shall the engineer do with his special selection of material when once he thinks he has separated it from the flood of raw material? Several courses are open to him: He may rely on his memory and the published index to his bound volumes. It is safe to say, however, that few engineers really make much practical use of this method. He may keep a special card index of important data and reference to valuable articles. This at once involves labor and attention, which few busy men can give, and which, if done by assistants or librarians, largely loses its personal value to the one who needs it. He may abstract important data in a limited way on loose leaf transparent paper, standard letter size, and he may remove or detach articles of special value from his journals, to be filed in regular office file system, like correspondence.

The writer has tried all of the above methods at considerable cost in time and patience, and has, for many years, settled upon the third method outlined. With all its admitted limitations it seems to be the best for an office which is expected to find out information on a great variety of subjects in a limited time and with the least amount of effort.

*Abstract of a paper presented before the ninth annual convention of the Federation of Trade Press Associations, Chicago, September 25, 1914.

General News Department

The Canadian Pacific announces that within the next two months 6,000 extra men will be employed by the company, the object being to relieve distress brought about by the war in Europe.

The White Audit System of checking passenger fares was adopted on October 1 by the Florida East Coast, the Louisville & Nashville, the Nashville, Chattanooga & St. Louis and the Mississippi Central.

On account of decreased passenger revenues due apparently to uncertainties occasioned by the European war, the Southern Railway has temporarily reduced the number of ticket collectors employed on its passenger trains.

It is reported from Mexico that the constitutional government, now in control of most of the railways of the country, has announced that none of the official positions are to be filled by Americans. Most of the American employees and officers have already been replaced by Mexicans.

In the federal court at Birmingham, Ala., September 22, the Alabama Great Southern was fined \$300 for violation of the Safety Appliance law, and the Central of Georgia \$100 for a similar offense. At Louisville, Ky., on the 25th, the Illinois Central pleaded guilty in three cases of the same kind and was fined \$300. Both of these courts also imposed heavy prison sentences, under the federal law, for stealing from freight cars.

Vice-President W. R. Scott of the Southern Pacific has issued, through the division superintendents, an appeal to all employees of the company, especially train and yard crews, for the benefit of passengers in sleeping cars. He asks them to increase their efforts to eliminate all unnecessary nocturnal noises, and furthermore, calls for suggestions for improvement of the service in this regard. He wants renewed attention given to the problem of doing away with the clanging of bells, tooting of whistles, hissing and sputtering of locomotives and shouting of trainmen in the vicinity of sleeping cars.

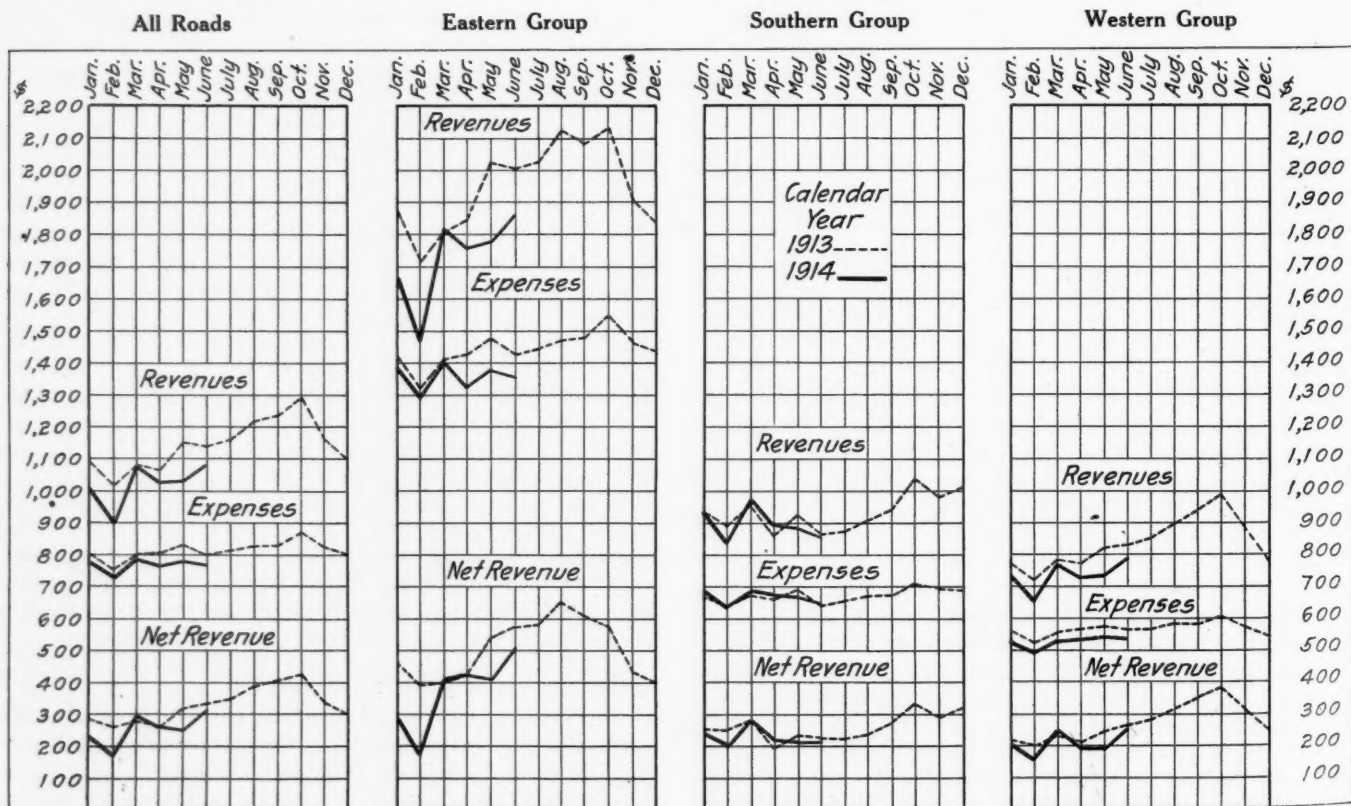
A recent statement issued by the New York Public Service Commission, First district, reports that the total number of tickets sold for passage in the Broadway and Lenox avenue subways operated by the Interborough Rapid Transit Company during the year ended June 30, 1914, was 340,413,103, an increase for the year of 12,941,593. As the commission treats Sundays as half days, the daily average for the first time in the history of the subway exceeds 1,000,000 passengers, the average having been 1,001,215. The daily average for the previous year was 963,152.

Representative Rupley, of Pennsylvania, introduced on Wednesday a bill to amend the interstate commerce law, providing that after the physical valuation of the railroads has been completed by the Interstate Commerce Commission the government may buy such lines at the price set as the actual value of the roads as may in the opinion of the commission be desirable, and that if at the expiration of 90 days from the offer to the railways the companies decline to sell, the government may enter the open market to buy such securities as may be necessary to obtain control. The price to be paid, however, must not exceed that set by the physical valuation. An initial appropriation of \$250,000,000 is to be provided by a bond issue.

Summary of Revenue and Expenses of Steam Roads

The Bureau of Railway Economics' summary of revenues and expenses and comments thereon for June, 1914, are as follows:

Railways operating 226,224 miles of line are covered by this summary, or about ninety per cent. of all steam railway mileage in the United States. Their operating revenues for the month of June, 1914, amounted to \$244,123,428. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with June, 1913, total operating revenues show a decrease of \$10,309,159. Total operating revenues per mile averaged \$1,079 in June, 1914, and \$1,135 in June, 1913, a



Monthly Revenues and Expenses per Mile of Line in 1914

decrease of \$56, or 5.0 per cent. There was a decrease of 5.7 per cent in freight revenue per mile, and a decrease of 4.7 per cent in passenger revenue per mile.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to \$173,747,857. This was \$5,728,228 less than for June, 1913. These operating expenses per mile of line averaged \$768 in June, 1914, and \$801 in June, 1913, a decrease of \$33 per mile, or 4.1 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to \$70,375,571, which was \$4,580,931 less than for June, 1913. Net operating revenue per mile of line averaged \$311 in June, 1914, and \$334 in June, 1913, a decrease of \$23 per mile, or 7.0 per cent.

Taxes for the month of June amounted to \$12,333,210, or \$55 per mile, an increase of 9.3 per cent. over June, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged \$256 per mile of line, and in June, 1913, \$284, thus decreasing \$28, or 9.8 per cent. Operating income for each mile of line for each day in June averaged \$8.54, and for June, 1913, \$9.47. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The operating ratio for June, that is, the per cent of total operating revenues absorbed in operating expenses, was 71.2 per cent, which is comparable with 70.5 per cent in June, 1913, and 68.5 per cent in June, 1912.

The railways of the eastern district show a decrease in total operating revenues per mile of line as compared with June, 1913, of 6.9 per cent, the railways of the southern district a decrease of 0.2 per cent, and the railways of the western district a decrease of 3.9 per cent. Operating expenses per mile decreased 5.1 per cent in the East, increased 1.3 per cent in the South, and decreased 4.4 per cent in the West. Net operating revenue per mile decreased 11.5 per cent in the East, decreased 4.5 per cent in the South, and decreased 2.7 per cent in the West. Taxes per mile show a decrease of 4.6 per cent in the East, an increase of 41.6 per cent in the South, and an increase of 13.4 per cent in the West. Operating income per mile decreased 12.0 per cent in the East, decreased 14.1 per cent in the South, and decreased 5.9 per cent in the West.

When the returns for the six months of the calendar year 1914 are compared with those of the corresponding months of 1913 they show a decrease in total operating revenues per mile of 6.4 per cent, a decrease in operating expenses per mile of 4.0 per cent, and a decrease in net operating revenue per mile of 13.1 per cent. This net operating revenue per mile decreased 21.1 per cent. in the East, as compared with the corresponding period of the previous year, decreased 4.2 per cent in the South, and decreased 8.3 per cent in the West.

The following table shows the per cent of operating revenues consumed by each class of expenses:

PER CENT OF TOTAL OPERATING REVENUES

	June		Fiscal year ending June 30		
	1914	1913	1914	1913	1912
Freight revenue	67.2	67.7	68.9	69.8	68.7
Passenger revenue	23.9	23.8	22.8	22.2	23.2
Other transportation	7.5	7.3	7.1	6.9	7.1
Non-transportation	1.4	1.2	1.2	1.1	1.0
Maintenance of way and structures ..	15.6	14.9	13.6	13.3	12.7
Maintenance of equipment	16.6	16.2	17.5	16.4	15.9
Traffic expenses	2.2	2.2	2.1	2.0	2.1
Transportation expenses	33.9	34.4	36.2	35.2	35.9
General expenses	2.9	2.8	2.6	2.4	2.5
Total operating expenses (excluding outside operations and taxes)	71.2	70.5	72.0	69.3	69.1

Fire Prevention on the Mobile & Ohio

General Manager R. V. Taylor of the Mobile & Ohio has set aside Friday, October 9, as "Fire Prevention Day" on that road. The purpose of this day is to make a fall clean-up of premises before the setting in of winter. All concerned are instructed to observe the day in the following manner:

Remove rubbish, grass and all other inflammable material from under and around buildings, platforms and bad order cars. Give the interior of all buildings a thorough house cleaning.

Examine carefully fire apparatus, hydrants, hose, couplings, water barrels, buckets, etc., to insure efficient service in case of emergency.

Inspect stoves, stove pipes and flues and remedy all defects.

Remove birds' nests from eaves of buildings to prevent engine spark fires.

Remove accumulation of old straw, hay, etc., from stock yards and pens.

Provide metal boxes for storage of matches.

Post "No Smoking" signs, as called for in Insurance Rule No. 5. Thoroughly clean out all bunk cars.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Next convention, May 4-7, 1915, Hotel Sherman, Chicago.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Demurrage Commissioner, Boston, Mass. Annual convention in April.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Next convention, October 22-24, Washington, D. C.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, East St. Louis, Ill. Annual meeting, May 21-24, 1915, Richmond, Va.
- AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Next meeting, May 20-21, 1915, San Francisco, Cal.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 29 W. 39th St., New York. Annual convention, October 12-16, Atlantic City, N. J.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York. Meetings with American Electric Railway Association.
- AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York. Semi-annual meeting, November 18, Chicago.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 20-22, 1914, Los Angeles, Cal.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 16-18, 1915, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Annual meeting, June, 1915.
- AMERICAN RAILWAY SAFETY ASSOCIATION.—L. F. Shedd, C. R. I. & P., Chicago. Next meeting, November, Chicago.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—A. R. Davis, Central of Georgia, Macon, Ga. Annual meeting, July, 1915.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. W. Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except June, July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—J. R. Wemlinger, 11 Broadway, New York. Regular meetings, 2d Thursday in month, at 2 P. M., 11 Broadway, New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Annual meeting, December 1-4, 1914, New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 19-21, 1915, Chicago.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, 1300 Pennsylvania Ave., N. W., Washington, D. C. Annual convention, April 28, 1915, Atlanta, Ga.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Annual meeting, second Tuesday in October, New York.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—C. W. Egan, B. & O., Baltimore, Md. Annual meeting, 3d week in May, 1915, Galveston, Tex.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Annual convention, October 26-30, 1914, Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, Soo Line, 112 West Adams St., Chicago. Annual meeting, June 22-25, 1915, Rochester, N. Y.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York. Next meeting, December 8-9, 1914, Richmond, Va.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. D. Mitchell, Detroit Graphite Co., Chicago, Ill. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawler Ave., Chicago. Regular meetings, 2d Monday in month, except July and August, Lytton Bldg., Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, R. F. & P., Richmond, Va. Annual meeting, June 16, 1915, Chicago.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, 11, Rue de Louvain, Brussels, Belgium. Next convention, June 23 to July 6, 1915, Berlin.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. G. Hall, C. & E. I., 922 McCormick Bldg., Chicago. Annual meeting, May 17-20, 1915, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 829 W. Broadway, Winona, Minn. Next convention, July 14-17, 1915, Sherman House, Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—T. I. Goodwin, C. R. I. & P., Eldon, Mo. Next convention, November 17-19, 1914, Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Annual convention, May, 1915.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Annual meeting, June, 1915.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Next convention, March 15-19, 1915, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. Frankenberg, 623 Brisbane Bldg., Buffalo, N. Y. Meetings monthly.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, Union Station, Peoria, Ill. Regular meetings, 2d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Friday in month, Kansas City.

RAILROAD MASTER TINNERS, COPPERSMITHS AND PIPEFITTERS' ASSOCIATION.—U. G. Thompson, C. & E. L., Danville, Ill. Annual meeting, May, 1915.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York. Annual meeting, December 10, 1914, Waldorf-Astoria Hotel, New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala. Annual meeting, October 6-7, 1914, Hotel Raleigh, Washington, D. C.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Times Bldg., Bethlehem, Pa.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, L. S. & M. S. Box C, Collinwood, Ohio. Annual meeting, May, 1915.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders and Master Mechanics Associations.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SALT LAKE CITY TRANSPORTATION CLUB.—R. E. Rowland, Hotel Utah Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meeting with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—Carl Nyquist, C. R. I. & P., La Salle St. Sta., Chicago.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. Ry., Atlanta Ga.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Candler Bldg., Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Erie R. R., Pittsburgh, Pa. Meetings bimonthly, Pittsburgh. Annual meeting, 2d Monday in June.

TRAFFIC CLUB OF ST. LOUIS.—A. F. Versen, Mercantile Library Bldg., St. Louis, Mo. Annual meeting in November. Noonday meetings October to May.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Annual meeting June 15, 1915, Minneapolis, Minn.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, L. S. & M. S., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.

WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Karpen Bldg., Chicago.

WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings.

REVENUES AND EXPENSES OF RAILWAYS

Name of road.	Average mileage operated during period.	Operating revenues				Maintenance				Operating expenses				Net operating revenue (or deficit).	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total inc. misc.	Way and structures.	Of equipment.	Traffic.	Trans- portation.	Miscel- laneous.	General.	Total.						
Baltimore & Ohio—System.....	4,516	6,086,321	1,462,338	8,146,688	815,396	1,591,317	162,690	3,075,935	56,139	173,189	5,874,667	2,272,021	2,000,750	—381,649			
Central of New Jersey.....	678	1,655,366	719,966	2,512,928	245,644	428,907	29,804	835,126	10,358	50,834	1,600,673	912,294	799,853	—156,986			
Delaware & Hudson Co.—R. R. Dept....	881	1,563,007	331,827	1,997,294	160,617	297,668	28,172	716,034	12,886	61,076	1,271,360	725,934	669,649	84,967			
Galveston, Harrisburg & San Antonio...	1,338	624,257	280,298	961,685	144,917	164,744	27,485	401,944	9,565	33,556	780,451	181,234	141,665	86,510			
Houston, East & West Texas.....	191	77,124	36,670	119,570	23,249	13,621	1,983	40,011	.....	2,831	81,518	38,053	33,803	17,123		
Houston & Texas Central.....	849	365,005	164,615	565,866	93,083	81,038	15,303	221,951	1,500	16,877	429,385	136,481	112,229	43,796			
Kansas City Southern.....	827	714,528	150,123	945,266	99,771	114,290	26,481	288,000	.....	40,833	569,375	375,891	331,029	89,696		
Louisiana Western	208	117,151	60,240	188,393	22,506	40,869	6,895	56,226	3,176	6,436	136,103	52,291	43,555	8,701			
Louisville, Henderson & St. Louis.....	200	81,028	36,593	124,709	28,881	16,983	5,340	37,900	.....	3,164	92,268	32,441	28,641	6,332		
Morgan's La. & Tex. R. R. & S. S. Co...	405	225,703	91,510	340,852	49,917	61,834	10,992	133,817	2,747	11,990	271,297	69,555	20,392	34,434			
Texas & New Orleans.....	469	229,229	105,956	378,187	62,083	77,220	7,171	176,096	11,971	10,214	344,552	33,635	15,794	25,781			
Ulster & Delaware.....	129	52,037	72,709	142,111	14,705	13,085	3,081	53,557	44	3,110	87,582	54,529	3,300	—3,863			
Union Pacific	3,615	2,962,221	966,737	4,374,544	644,012	613,109	92,318	1,062,242	76,399	112,424	2,600,007	1,774,537	1,592,313	—92,885			

Traffic News

The Western Classification Committee has announced hearings at its office in Chicago on October 8, 9 and 13.

Illinois roads have announced the cancellation of tariffs filed last year with the Illinois railroad commission providing for an advance of 1 cent per 100 lb. in grain rates. The advance was suspended by the old commission and again by the new Illinois Public Utilities Commission.

According to advices received by the Canadian Pacific, 21,195,857 bushels of wheat had been marketed on all lines west of Winnipeg to September 16, as against 9,445,400 bushels on

the same date last year, showing an increase of 11,750,457 bushels. Western Canadian farmers have already received approximately \$20,000,000 for this, or about \$14,000,000 more than the amount realized last year at the same date.

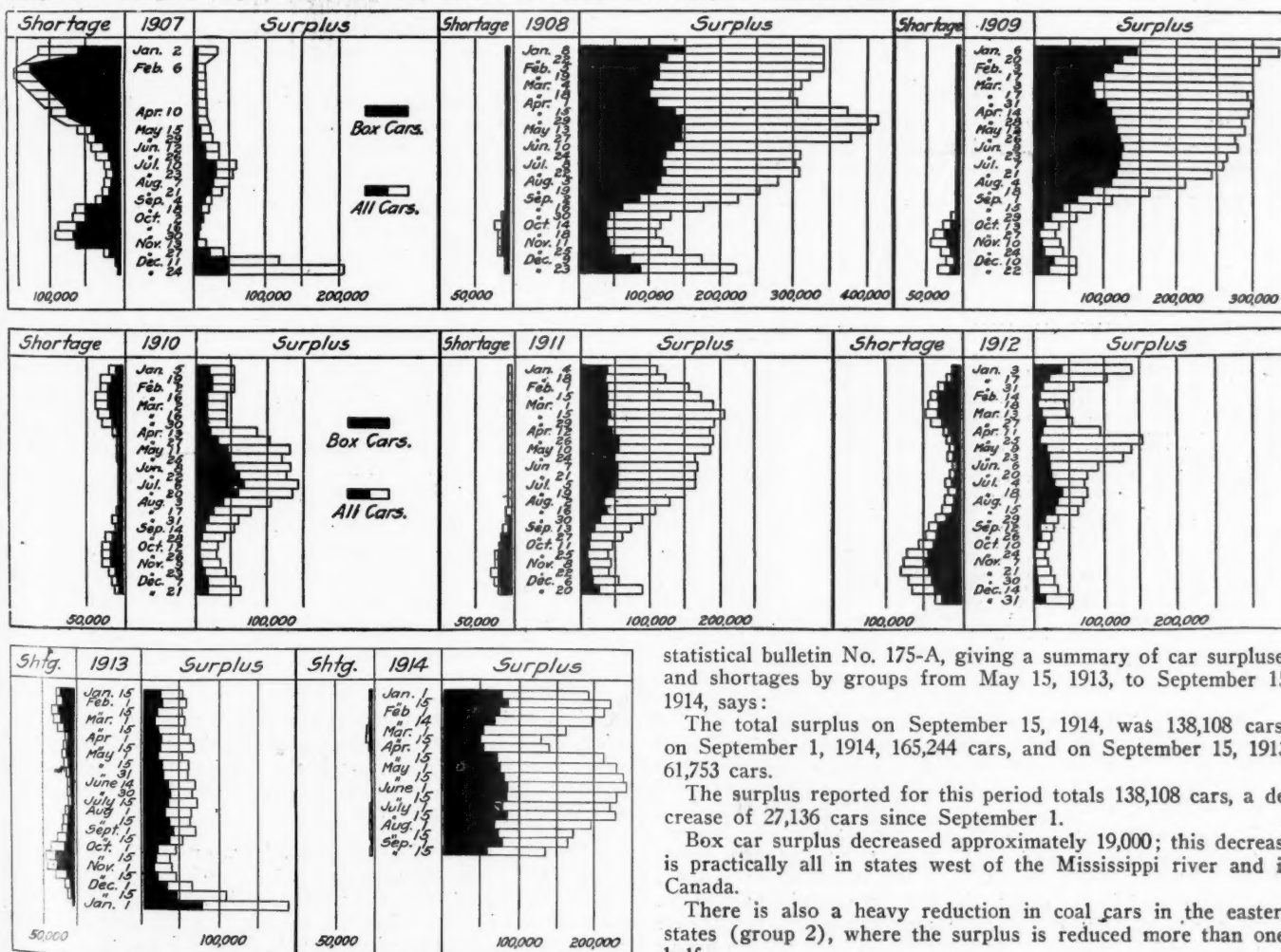
The Southern Pacific has issued a new lumber tariff naming through rates by way of the Northern Pacific and Southern Pacific from points in Washington on the Portland-Tacoma line and the Gray's Harbor and Willapa Harbor lines to points in California, Nevada and New Mexico. This places the Northern Pacific points on the same basis as those on the Oregon-Washington Railroad & Navigation Company and makes an important reduction below the former combination of local rates.

Car Surpluses and Shortages

Arthur Hale, chairman of the committee on relations between railroads of the American Railway Association, in presenting

Date	No. of roads.	Car Surpluses and Shortages					Shortages				
		Surpluses					Shortages				
		Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.
Group *1.—September 15, 1914.....	9	822	276	1,326	629	3,053	298	0	0	19	317
" 2.—" 15, 1914.....	34	572	185	5,232	3,533	9,522	47	0	0	0	47
" 3.—" 15, 1914.....	31	2,150	1,141	16,957	3,755	24,003	112	0	0	205	317
" 4.—" 15, 1914.....	11	6,588	1,637	3,194	1,322	12,741	75	60	9	0	144
" 5.—" 15, 1914.....	25	2,416	594	4,096	2,492	9,598	0	2	0	0	2
" 6.—" 15, 1914.....	29	15,166	1,629	2,823	4,979	24,597	0	21	0	0	21
" 7.—" 15, 1914.....	4	1,575	25	963	815	3,378	0	0	0	0	0
" 8.—" 15, 1914.....	15	4,151	322	1,968	3,163	9,604	388	30	89	2	509
" 9.—" 15, 1914.....	14	1,569	216	258	814	2,857	6	0	6	4	16
" 10.—" 15, 1914.....	23	5,379	1,160	2,741	8,439	17,719	68	1	87	10	166
" 11.—" 15, 1914.....	5	17,111	1,316	0	2,609	21,036	520	0	0	0	520
Total	200	57,499	8,501	39,558	32,550	138,108	1,514	114	191	240	2,059

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan and Western Pennsylvania lines; Group 4—West Virginia, Virginia, North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida lines; Group 6—Iowa, Illinois, Wisconsin and Minnesota lines; Group 7—Montana, Wyoming, Nebraska, North Dakota and South Dakota lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Washington, Oregon, Idaho, California, Nevada and Arizona lines; Group 11—Canadian lines.



Car Surpluses and Shortages, 1907 to 1914

statistical bulletin No. 175-A, giving a summary of car surpluses and shortages by groups from May 15, 1913, to September 15, 1914, says:

The total surplus on September 15, 1914, was 138,108 cars; on September 1, 1914, 165,244 cars, and on September 15, 1913, 61,753 cars.

The surplus reported for this period totals 138,108 cars, a decrease of 27,136 cars since September 1.

Box car surplus decreased approximately 19,000; this decrease is practically all in states west of the Mississippi river and in Canada.

There is also a heavy reduction in coal cars in the eastern states (group 2), where the surplus is reduced more than one-half.

The total shortage on September 15, 1914, was 2,059 cars; on

September 1, 1914, 1,918 cars, and on September 15, 1913, 21,594 cars. A very slight increase is noticeable in the shortage.

The table on the previous page gives car surplus and shortage figures by groups for the last period covered in the report, and the diagram shows total bi-weekly surpluses and shortages from 1907 to 1914.

Commercial Travelers Protest Increased Mileage Rate

The Illinois Commercial Men's Association is sending out a letter to 100,000 commercial travelers protesting against the action of the eastern railways in advancing the rates for mileage books to 2¼ cents a mile. The letter says: "This is a direct slap at the commercial traveler and should not be submitted to without a good, hard fight. They are striking at your bread and butter, at your very existence, and it is time we rose en masse and showed them what it means to get 500,000 live wires after them." With the letter is enclosed a form of a protest to the Interstate Commerce Commission, which the recipients are asked to fill out and mail immediately so that all the letters will reach the commission about the same time. It is suggested, however, that it would be best to write individual letters, and also to write to United States senators and representatives. The form letter to the commission says: "If this increase is permitted the burden will fall almost entirely upon the shoulders of the commercial traveler, because it is only the commercial traveler who uses the mileage book, and I do not believe that your honorable body will sanction the railroads doing an act which will place this unjustifiable burden upon it. It may be true that the railroads would be justified in increasing the rate on single trip tickets or round trip tickets in certain localities, but mileage books containing 1,000, 2,000 or more miles, should be sold at the price they are now selling at, and have sold at for more than 35 years. The commercial traveler is entitled to be designated the advance agent of business, and just now what this country needs more than anything else is more business." The letter states also that if such an increase is granted it is not the manufacturer or jobber who will pay it, but the commercial traveler.

Car Location

The accompanying table, which was taken from bulletin No. 22 of the American Railway Association, gives a summary of freight car location by groups on September 1, 1914:

CAR LOCATION ON SEPTEMBER 1, 1914													
	New England.	N.Y., N.J., Del., Md., Eastern Pa.	Ohio, Ind., Mich., Western Pa.	Va., W. Va., No. & So. Carolina.	Ky., Tenn., Miss., Ala., Ga., Fla.	Iowa, Ill., Wis., Minn.	Mont., Wyo., Neb., Dakotas.	Kans., Colo., Okla., Mo., Ark.	Texas, La., New Mexico.	Oregon, Idaho, Nev., Cal., Ariz.	Can- adian Lines.	Grand Total.	
Total Cars Owned.....	87,557	683,063	263,555	215,763	175,279	495,435	25,165	154,812	33,874	119,342	154,621	2,408,466	
Home Cars on Home Roads.....	54,345	450,262	109,985	141,563	109,546	359,174	13,227	105,399	20,872	77,933	108,498	1,550,804	
Home Cars on Foreign Roads.....	33,212	232,801	153,570	74,200	65,733	136,261	11,938	49,413	13,002	41,409	46,123	857,662	
Foreign Cars on Home Roads.....	35,833	225,978	177,331	59,903	51,675	159,834	10,689	51,364	23,407	44,431	26,425	866,870	
Total Cars on Line.....	90,178	676,249	287,316	201,466	161,221	519,008	23,916	156,763	44,279	122,364	134,923	2,417,674	
Excess or Deficiency.....	2,621	*6,823	23,761	*14,297	*14,058	23,573	*1,249	1,951	10,405	3,022	*19,698	9,208	
Surplus	3,153	17,262	24,030	13,678	8,125	29,472	6,285	13,460	3,418	20,690	25,671	165,244	
Shortage	429	206	846	0	32	176	0	47	53	129	0	1,918	
Shop Cars—													
Home Cars in Home Shops.....	8,458	61,274	25,881	20,341	17,092	32,634	951	15,350	3,733	5,283	6,541	197,538	
Foreign Cars in Home Shops.....	556	5,563	7,319	1,002	1,302	4,592	541	1,507	823	1,968	157	25,330	
Total Cars in Shops.....	9,014	66,837	33,200	21,343	18,394	37,226	1,492	16,857	4,556	7,251	6,698	222,868	
Per Cent to Total Cars Owned—													
Home Cars on Home Roads.....	49.69	65.92	41.73	65.61	62.50	72.50	52.56	68.08	61.62	65.30	70.17	64.39	
Total Cars on Line.....	105.44	99.00	108.90	93.37	91.98	104.76	95.04	100.22	130.72	102.53	87.26	100.30	
Home Cars in Home Shops.....	7.58	8.97	9.82	9.43	9.75	6.59	3.78	9.91	11.02	4.43	4.23	8.20	
Foreign Cars in Home Shops.....	.98	.81	2.78	.46	.74	.92	2.15	.90	2.43	1.65	.10	1.05	
Total Cars in Shops.....	8.56	9.78	12.60	9.89	10.49	7.51	5.93	10.81	13.45	6.08	4.33	9.25	

*Denotes deficiency.

THE SAN FRANCISCO FAIR.—The traffic department of the Panama-Pacific International Exposition has received word from eastern freight forwarding agents that the interruption of transatlantic travel caused by the European war will not interfere with the shipment from Holland of the hundreds of thousands of bulbs for the exposition gardens. Orders for the bulbs in great quantities were placed with Dutch nurserymen by the landscape department of the exposition. As the tulips, iris and other flowers included in the order will form an essential part of the landscape decoration considerable apprehension was felt over the possibility that Holland growers would be unable to export the bulbs. The shipment will be the largest of the kind ever received in this country.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The Omaha Grain Exchange has filed a complaint with the commission asking a reduction in the rates on wheat and corn to Omaha, South Omaha and Council Bluffs.

The National Industrial Traffic League has protested to the Interstate Commerce Commission against reopening the California switching cases, as asked recently by the California roads.

The commission has suspended from October 1 to January 1 tariffs of the Atchison, Topeka & Santa Fe and other western railroads proposing to withdraw the concentration rates on eggs, butter and poultry at Omaha, Neb., and other western points.

The Nebraska Railroad Commission has filed a complaint with the Interstate Commerce Commission asking a readjustment and reduction of rates on wheat and corn from Nebraska and other middle western points to St. Joseph and Kansas City, Mo., and Atchison and Topeka, Kan.

The commission has announced that a hearing will be held in Chicago on January 20, 1915, for the purpose of inquiring into the question of embargoes, the conditions under which they are established and the manner in which notice is given, it having been alleged that certain coal roads have established embargoes which resulted in discrimination against certain shippers.

Western railways are filing with the commission supplements to their demurrage tariffs imposing higher rates on refrigerator cars, when used for perishable freight shipments, effective on October 15. The proposed charge is \$2 per car for each of the first two days after free time and \$3 per day for each succeeding day. It was recommended by the American Railway Association.

The commission has entered a long and short haul order affecting the class and commodity rates of New York, Philadelphia, Baltimore and related points to Norfolk, Port Norfolk, Pinnars Point, Portsmouth and Old Point, Va., granting the

carriers authority to continue charging lower rates to the Virginia cities named than to intermediate points; but it is directed that on and after December 1, the rates to the Virginia cities shall not be any lower than the rates from the northern points north of Cape Charles, Va.

A hearing will be held at Reno, Nev., on October 23, on the complaint of the Nevada Railroad Commission against tariffs filed some time ago by the western railways requiring the payment of two full fares for passengers having the exclusive use of a drawing room and one and one-half fares for a compartment. The Canadian railway commission has recently sustained a complaint against a similar tariff filed by the Canadian roads, sug-

gesting as a compromise that drawing rooms and compartments may be reserved for two or more persons, but that no extra charge be made for one person if the compartment or drawing room would otherwise be vacant.

STATE COMMISSIONS

The California Railroad Commission has ordered a hearing on November 30 in its investigation of the rates, practices and regulations of the Pullman Company.

The Idaho Public Utilities Commission has granted the application of the Pacific Northwest Demurrage Bureau for permission to increase demurrage charges on refrigerator cars.

The Tennessee Railroad Commission is taking measures to compel the Illinois Central to reduce all passenger fares in that state to the basis of 2½ cents a mile. All of the other principal roads in the state have complied with the wishes of the authorities by making reductions to this basis. The Illinois Central is expected to contest in the courts the order issued, or to be issued, by the commission.

The New Hampshire Public Service Commission, in refusing the request of the Boston & Maine and the Grand Trunk for approval of a proposed increase in mileage ticket rates in that state from 2 to 2¼ cents a mile, quotes the statute which requires the issuance of 500-mile tickets at a rate of two cents a mile, and holds that "we should not enter upon a long and expensive hearing to determine whether the rate fixed is compensatory until it has been determined by the Supreme Court that it is our duty to do so."

The Railroad Commission of Louisiana has issued an order that no regular freight or passenger station, or flag station, shall be closed or discontinued by any railroad operating in the state without the consent of the railroad commission, except for causes beyond control of the railroad. No railroad telegraph office shall be closed, abandoned or discontinued without the consent of the commission, except for causes beyond control. In case any station or telegraph office is closed for causes beyond the control of the railroad, a full report of the causes shall be made to the commission immediately and arrangement to reopen it must be made within 15 days. The commission has also ordered that wherever through trains are operated in the state through tickets shall be sold from any agency station to any agency station at which the train stops. When passenger trains are scheduled to make connections at junction points with trains of other railroads through tickets shall be sold between points on the different railroads.

PERSONNEL OF COMMISSIONS

R. F. Peters, mechanical engineer of the San Antonio & Aransas Pass, has been appointed senior mechanical engineer, division of valuation, of the Interstate Commerce Commission, with headquarters at Kansas City, Mo.

COURT NEWS

The Southern Pacific was fined \$100,000 in the United States District Court at Los Angeles on September 21, on a charge of rebating in offering a Redlands, Cal., orange growers' association preferential rates from St. Louis to Chicago.

The attorney general of Missouri has filed a suit in the state court at Jefferson City to enforce a statute requiring the railroads to transport the Missouri National Guards at a flat rate of one cent a mile. The railroads are contending that the statute in question was repealed by implication by the act creating the commission and empowering the state railroad commission to fix just reasonable rates.

FRENCH TRAIN SERVICES RESUMED.—It is reported from Paris that the Northern railways are about to resume their train services to places previously occupied by Germans. On the Northern line trains which already travel to Pleriffitte, Pontoise, Argenteuil, and Sevran-Livry will soon be run as far as Chantilly, Crecy in Valois, and Dammartin. On the Eastern line trains go to Lagny. On the Belfort line the service is normal.

Railway Officers

Executive, Financial, Legal and Accounting

L. A. Farquhar has been appointed auditor of the Norfolk Southern, with office at Norfolk, Va., succeeding W. L. Bird, resigned.

J. R. McCoy has been appointed assistant auditor for the receivers of the Denver, Laramie & Northwestern, with office at Denver, Colo.

W. C. Bowhay has been appointed freight claim agent of the Cincinnati, Hamilton & Dayton, with office at Cincinnati, Ohio, succeeding B. M. Waldron, resigned to accept service with the Baltimore & Ohio.

H. L. Utter, assistant secretary and assistant treasurer of the Missouri Pacific at New York, has been elected secretary and treasurer, with headquarters at New York, and S. N. Rice, assistant to Mr. Utter, has been appointed assistant secretary and assistant treasurer, with headquarters in New York, succeeding Mr. Utter.

J. A. D. Vickers, who has recently been acting vice-president and general manager of the American Express Company, at Chicago, has been elected vice-president and general manager, succeeding George C. Taylor, who recently was elected president. Mr. Vickers was until recently general manager of the National Express Company.

Thomas Hackney, of the firm of Thomas & Hackney, of Carthage, Mo., has been appointed general attorney for the Missouri Pacific and the St. Louis, Iron Mountain & Southern for Jackson County, Mo., with headquarters at Kansas City, Mo. The firm has represented the system at Carthage since 1903. Thomas L. Phillips, assistant to the general solicitor, has been appointed valuation attorney, with headquarters at St. Louis.

Operating

F. J. McKee has been appointed superintendent of the Port Huron, Mich., terminals of the Grand Trunk, succeeding J. F. Jones, resigned, on account of ill-health.

George A. Hoag, whose appointment as superintendent of car service of the Canadian Northern, Eastern lines, with headquarters at Toronto, Ont., has already been announced in these

columns, was born on May 31, 1866. He was educated in the Kingston public schools and at the Kingston Business College. On June 8, 1884, he began railway work as a switchman on the Grand Trunk, serving in the same capacity at various places until May 3, 1886, when he was appointed night operator. He remained in that position until January, 1888, and then was promoted to day operator and relief agent. In 1899 he was appointed agent at Trenton, Ont., and from 1901 to 1905 he was yardmaster at Belleville. He then entered the service of the Central Ontario, a Canadian



G. A. Hoag

Northern line, and from October, 1905, to March, 1908, was trainmaster on that road. He was promoted to superintendent on March 1, 1908, and in July, 1914, was appointed superintendent of car service of the Canadian Northern, Eastern lines, as above noted.

T. F. McCarthy, general yardmaster of the Lehigh Valley at Jersey City, N. J., has been appointed trainmaster, with office at Jersey City, succeeding M. A. Mulligan, promoted.

George P. Johnson, general manager of the Chesapeake & Ohio, at Richmond, Va., has resigned, and at present no successor will be appointed, the work being divided among other officers.

H. C. Grout, assistant general superintendent of the Canadian Pacific at St. John, N. B., has been appointed general superintendent of the Atlantic division, with headquarters at St. John, succeeding William Downie, retired.

Traffic

W. S. Smith, traveling freight agent of the Frisco Lines at Houston, Tex., has been appointed assistant general freight agent of the St. Louis, Brownsville & Mexico, at Kingsville, Tex.

Claude P. Wilson, commercial agent of the Missouri, Oklahoma & Gulf at Houston, Tex., has been appointed general agent at Dallas, Tex., succeeding F. S. Sleight, resigned on account of ill health.

W. T. Webster, division freight agent of the Chicago, Indianapolis & Louisville at Bedford, Ind., has been appointed general freight agent, with office at Chicago, succeeding O. C. Carter, resigned.

F. R. Darby, traveling passenger agent of the Western Maryland, at Cumberland, Md., has been promoted to the new position of district passenger agent, with headquarters at Pittsburgh, Pa., and William E. Zirckel has been appointed traveling freight agent, with headquarters at Cleveland, Ohio.

Engineering and Rolling Stock

George Strasding has been appointed roadmaster of the Pasco division of the Northern Pacific, at North Yakima, Wash.

O. E. Shaw has been appointed general car foreman of the Chicago & Eastern Illinois at Danville, Ill., succeeding Harry G. Love, resigned.

W. H. Snyder, whose appointment as master mechanic of the Erie, with headquarters at Stroudsburg, Pa., has been announced in these columns, was born on July 14, 1874, at Ashley, Luzerne county, Pa. He began railway work on March 18, 1894, as machinist apprentice in the Central of New Jersey shops at Ashley, remaining with that road until July, 1901, when he went to Stroudsburg as a machinist in the Erie shops. In October, 1903, he was promoted to tool room foreman, and in November, 1905, was appointed assistant to general foreman. He remained in that position until January, 1912, when he was promoted to general foreman, which position he held at the time of his appointment on September 1, as master mechanic of the same road, as above noted.

OBITUARY

George L. Rhodes, formerly assistant general passenger agent of the Chicago, Rock Island & Pacific, died on September 23 at his residence in Chicago, aged 65 years.

E. B. Gilbert, formerly superintendent of motive power of the Bessemer & Lake Erie, died at his home in Greenville, Pa., on September 7. Mr. Gilbert was born at Windsor, N. Y., on December 13, 1843. He took up the trade of machinist, and later was employed on the Erie Railroad, both at Youngstown, Ohio, and at Galion, in the latter place holding the position of foreman. He went to Greenville about 28 years ago, and entered the service of the Pittsburgh, Shenango & Lake Erie, now the Bessemer & Lake Erie. He was promoted from machinist foreman to master mechanic, and later to superintendent of motive power, which position he held until his resignation in 1909.

AN ENGLISH EMPLOYEE'S REVENGE.—On September 10 in a London court a foreman on the London, Brighton & South Coast was sentenced to 12 months' imprisonment for having cut electric wires connected with signaling apparatus on his railroad. The prisoner declared that his motive was revenge on the company for not allowing him to work overtime.

Equipment and Supplies

LOCOMOTIVE BUILDING

THE NASHVILLE, CHATTANOOGA & ST. LOUIS is considering the purchase of 10 Mikado and 7 Pacific type locomotives.

CAR BUILDING

The hearing on the application of the receivers of the Cincinnati, Hamilton & Dayton, for authority to issue certificates for purchase of additional equipment as mentioned recently in the *Railway Age Gazette* has been indefinitely postponed. This action was taken in view of the financial situation, the receivers believing that too high a rate of interest would have to be paid at this time.

IRON AND STEEL

THE DENVER UNION TERMINAL has ordered 703 tons of steel for a new Union station at Denver, Colo., from the American Bridge Company.

THE CHICAGO & WESTERN INDIANA has ordered 465 tons of material for a bridge over Little Calumet river, near Dalton, Ill., from the American Bridge Company.

PASS PRIVILEGES FOR WIVES OF ENLISTED ENGLISH RAILWAYMEN.—The various railway companies of England have announced that they will continue to grant passes and privilege tickets to the wives and families of Reservists or Territorials who have been called out from the service to join the colors, exactly as though the men were still in railway employ.

BRITISH LOCOMOTIVE EXPORTS DECLINE BECAUSE OF WAR.—The value of locomotives exported from the United Kingdom in August decreased sharply as compared with like business for previous months. The value of the engines shipped was \$1,019,760, as compared with \$1,460,335 in August, 1913, and \$559,568 for August, 1912. Depression in Argentina has greatly reduced the demand for British locomotives in that quarter and engines to the value of only \$44,100 were shipped in August as compared with \$436,650 and \$106,456. There was a good demand for British locomotives in Australia in August, but the value of the engines despatched to India during the month declined to \$241,360 as compared with \$483,089 in August, 1913. The aggregate value of the locomotives exported during the first eight months of the present year, on the other hand, was \$12,811,702 as compared with \$8,672,823 in the first eight months of 1913 and \$6,427,750 in the first eight months of 1912.

TRESPASSING REDUCED TO A SCIENCE.—When a locomotive makes its first trip along the rails in an out-of-the-way place the natives look upon it with awe. The Chinese, for example, would not allow the "fire devil" to move until Li Hung Chang mounted beside the driver. After a while, on the other hand, this feeling of dread is changed to one of overwhelming confidence, especially on the part of men employed on the line and of people living close to it. The familiarity thus engendered leads to most of the fatalities among maintenance of way employees, trespassers, people at grade crossings and others walking along the line. It is said that in India the right of way is a favorite resting place of cowherds in particular and that the space between the rails has been proved many times to be quite safe to lie down in. When women and children are employed to unload ballast from a train they are fond of sleeping with their heads on the rails during the dinner hour, and it is necessary to walk along the train and awake them before it is moved in order to avoid wholesale decapitation. A recent incident occurred on the Eastern Bengal State Railway in which three natives engaged in maintenance of way work who had been set to watch the line by which the governor was to travel laid their ears on the rails, the better to hear the approaching train, went to sleep and were run over.

Supply Trade News

F. J. O'Brien has been appointed general sales agent of the Globe Seamless Steel Tubes Company, Chicago, effective October 1.

The Chicago & Alton has contracted with the Hupp Automatic Exchange system for the installation of its mail exchange system on mail cars, and at 33 stations between Chicago and St. Louis.

The Central Trust Company of Illinois has been appointed receiver of the Crawford Locomotive & Car Company at Streator, Ill. An involuntary petition in bankruptcy was filed against the company last week.

The Monarch Steel Castings Company, Detroit, Mich., announces the opening of an exhibit of Lion and Monarch couplers, Lion coupler pockets for locomotives and Lion cast steel yokes in the office of H. F. Wardwell, their Chicago representative at 548 Railway Exchange, Chicago.

Wellington B. Lee will henceforth handle the Superior rail anchor for the Track Specialties Company, New York, in eastern territory. It is also announced that the Sargent Company, 1418 Fisher building, Chicago, will represent the Track Specialties Company in the Chicago district.

Al H. Hoffman, president of the Wimo Supply Company, 304 Oriental building, Seattle, Wash., the representative of the Indianapolis Switch & Frog Company, Springfield, Ohio, in Seattle and vicinity, has also been appointed to cover the territory formerly handled through representatives at Spokane and Portland.

The general sales offices of the Cambria Steel Company, now located at Johnstown, Pa., are to be removed within a few weeks to Philadelphia, it being the desire of the company to have the general sales offices and the executive offices in the same place. It is expected that not later than November 1 the entire sales offices will be located on the seventeenth floor of the Morris building in Philadelphia. It is also the intention of the company to establish sales offices in the near future in Rio de Janeiro, Brazil; Mexico City, Mexico; Buenos Aires, Argentina, and London, England. The company proposes to seek foreign trade vigorously, and in this the location of the sales offices in Philadelphia is expected to prove advantageous.

Ellis F. Muther, eastern sales manager of the Gisholt Machine Company, Madison, Wis., with headquarters in New York, has been appointed general sales manager of the company, with office at Madison. It is also announced that J. E. Brandt, hitherto representative in Philadelphia and vicinity, has become associated with the Swind Machinery Company, which has been appointed a Gisholt agency in that city. J. L. Osgood has been appointed exclusive agent in Buffalo and Rochester, N. Y. R. D. Heflin, formerly representative of the company in New England, has been placed in charge of the New York office, and will henceforth attend to the interests of Gisholt customers and users in the entire eastern territory.

TRADE PUBLICATIONS

HIGHWAY CROSSING SIGNALS.—The Hall Switch & Signal Company, New York, has issued a 16-page pamphlet, 6 in. x 9 in., describing, with illustrations, its "audible-visible" highway crossing signal. This signal is an enclosed disk, like the well known Hall block signal, with a bell added. By day a red disk, and by night a red light furnishes a warning for the automobilist, even if he be deaf. An interesting installation of this type of signal at a crossing on the Lehigh Valley was described in the *Railway Age Gazette*, June 19, last, page 1522. The Lehigh Valley has 47 crossings protected by these signals. The pamphlet calls attention to the fact that this signal is time-tested, the design of the apparatus being substantially the same as that which has proved eminently successful in block signals in all parts of the country for forty years.

Railway Construction

ALABAMA GREAT SOUTHERN.—A contract is reported let to H. C. Elkins, Baltimore, Md., for 11 miles of double-track work between Birmingham, Ala., and Mobile Junction. (August 14, p. 310.)

BELLINGHAM & NORTHERN.—A contract is reported let to Henry & McFee, Seattle, Wash., to build a three-mile extension from Bellingham, Wash., to Whatcome lake. This company is a subsidiary of the Chicago, Milwaukee & St. Paul, and operates 44 miles of railway from Bellingham, Wash., north to Sumas, thence southeast to Glacier.

CANADIAN PACIFIC.—The Railway Commission of Canada has authorized the Canadian Pacific to open for traffic a single track diversion of the Moose Jaw subdivision, from Indian Head, Sask., mileage 50 to Qu'Appelle, mileage 59.8; and new second track from mileage 59.8 to 67.7 near McLean, Sask.

CHICAGO, MILWAUKEE & ST. PAUL.—The report of this company for the year ended June 30, 1914, shows that construction work has been in active progress during the year on the second main track and grade reduction work on the Chicago and Council Bluffs division in Iowa, also on the Hastings and Dakota division, and it is expected to have the improvements finished and the new tracks open for operation before the coming winter between Green Island, Iowa, and Manilla, 270 miles. Work is now under way depressing the tracks on about three miles along the Hastings and Dakota division, in the city of Minneapolis, Minn., which will eliminate 37 grade crossings. About 35 per cent of the work has been completed, and it is expected that all the work will be finished early in 1916. The elevation of the tracks along the Bloomingdale road in the city of Chicago on 2.4 miles is under way, and when completed will eliminate 35 grade crossings. Elevation of tracks in the city of Milwaukee, Wis., is now under way on 1.4 miles, and is about 15 per cent completed; the work will be continued over a period of two years, and when finished this improvement will eliminate 14 grade crossings. Work was begun in February of this year on the elevation of tracks on the Chicago and Evanston division, from Montrose avenue to Howard avenue, Chicago, on 4.4 miles, and this work is now about 15 per cent completed. The work will extend over a period of three years, and will eliminate 36 grade crossings. Work on the extension from Crystal Falls, Mich., to Iron River is about finished, and the main line and connections with the various iron mines have been completed and are in operation. The line from Lewistown, Mont., to Great Falls, 137 miles, is also finished, and will be opened for operation in September. Construction of the Choteau line from Great Falls, Mont., to Agawam, 70 miles, has been temporarily suspended, and will not be completed before next season. The lines from Hilger, Mont., to Roy; from Roy Junction to Winifred; from Lewistown to Grass Range, and from Colorado Junction to Cliff Junction have been completed and are in operation. The line into Spokane, Wash., has been completed and is in operation, the C. M. & S. P. having entire ownership of the line from Plummer, Idaho, to Bell, Wash., 21 miles, and joint use with the Oregon-Washington Railroad & Navigation Company of that company's line from Bell to Spokane. In the city of Spokane the terminal tracks and buildings and freight house have been completed and are in operation. Work on the Newwood River line, a logging road extending 17 miles northwesterly from Merrill, Wis., was started in October, 1913, and up to June of this year the grading was completed on about 8 miles, and the track was laid on about 4 miles. The construction of the Snoqualmie tunnel, at the summit of the Cascade mountains, is nearing completion, the work being carried on from both portals, and it is expected that the tunnel will be open for traffic early in 1915. This improvement will provide a route 3.6 miles shorter than the existing line; it will also avoid all trouble caused by snow slides on the Coast division, and the heavy grades will be eliminated.

CHICAGO & NORTH WESTERN.—The report of this company for the year ending June 30, 1914, shows that work on the elevation

of the six main tracks on the Galena division in the village of River Forest, Ill., 0.6 miles and the construction of an elevated yard with a capacity for 300 cars is now under way, and it is expected that the improvements will be completed during 1914. At Milwaukee, Wis., the company has undertaken the elevation of the main tracks and certain yard tracks on the Wisconsin division on 1.04 miles and on the Madison division on 0.77 miles. In connection with the elevation of the existing tracks, provision has been made for the construction of two additional tracks on the Wisconsin division. These improvements include the construction of two subways on the Wisconsin division and two on the Madison division. The total miles of main, yard and side tracks to be elevated are equivalent to 14.81 miles of single track railway. Work is now under way on important revisions of grade between Nelson, Ill., and Peoria. During the year substantial progress has been made in the filling, and a protection crib has been completed in connection with the filling in and occupying with additional tracks, about ten acres of submerged lands east of the company's present holdings on the shore of Lake Michigan in Milwaukee, Wis. The Macoupin County Extension Railway, organized to build from a connection with the Macoupin County Railway near Benld, south about nine miles to coal fields under development in Macoupin and Madison counties, Illinois, was finished during the year from Benld to Staunton, 4.36 miles, and the Iowa Southern, organized to build from a connection with the C. & N. W., in Monroe county, Iowa, southwest for about 25 miles, was completed during the year from a connection with the C. & N. W., at Miami, Iowa, to the company's coal fields in Monroe county, 12.25 miles.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—The report of this company for the year ended June 30, 1914, shows that during the year work was finished on the extension from Kaiser, Wis., to Park Falls, 5.99 miles, and the line is now in operation. Work on second track was also completed and is now in operation between Truax, Wis., and Northline, and on additional yards at Hazel Park and at Minneapolis, Minn. Filling for a new coach yard at Minneapolis, Minn., has been finished, and a new yard for the interchange of traffic between the Eastern and Northern divisions was constructed at Northline, Wis., containing 2.98 miles of track. The net increase in sidetracks and in yard tracks during the year was 12.01 miles.

GEORGIA ROADS.—Plans are being made to build a line from Homer, Ga., northwest to Lula on the Southern Railway about 15 miles. In addition about 3 miles of sidings are to be constructed also a 40-ft. span bridge. Prices are now wanted by D. G. Zeigler & Sons, Lula, for supplying rails, switches, frogs, spikes, etc.

KENTUCKY ROADS (Electric).—A franchise has been granted by the city of Middlesboro, Ky., to Godfrey Hunter to build about 5.5 miles of electric lines to connect Middlesboro with adjoining towns.

LORAIN, ASHLAND & SOUTHERN.—An officer writes that in addition to the line in operation from Custaloga, Ohio, northwest to Ashland, 23 miles, a section of 24 miles on the extension building from Ashland north via Wellington to Lorain has been completed and was opened for business on September 5. A total of 67 miles of track has been laid, and it is expected that the remaining section to Lorain will be opened for business at an early date.

LOUISVILLE & NASHVILLE.—This company is securing rights of way, it is said, for building an extension from the line now ending at Cartersville, Ga., southeast to a connection with the line ending at Marietta, thence to Atlanta. It is thought that the Louisville & Nashville is back of the North Georgia Mineral, recently incorporated to build from Atlanta northwest about 50 miles.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—An officer writes that track will be laid in October on an extension from a point four miles west of Makoti, N. D., on the Plaza line, west to Van Hook in Mountrail county, 23 miles. The line is eventually to be extended further west to Fairview, Mont. Foley Brothers, Welch & Stewart, St. Paul, Minn., had the contract for the grading work, which involved handling about 37,000 cu. yd. to the mile.

MURPHYSBORO & SOUTHERN ILLINOIS (Electric).—This company has prepared plans for an 8-mile electric railway to be built be-

tween Murphysboro, Ill., and Carbondale. Edward Flad & Co., De Menil building, St. Louis, Mo., engineers.

NORTH GEORGIA MINERAL.—See Louisville & Nashville.

SOUTH FLORIDA & GULF.—Work is now under way, it is said, on a line from Kenansville, Fla., to a point on the Kissimmee river, about 37 miles. The construction work is being carried out by the company with day labor, and about 6 miles of track has been laid. C. H. Armstrong, president, Kenansville, Fla.

RAILWAY STRUCTURES

ALBERT LEA, MINN.—The Minneapolis & St. Louis has awarded a contract for the erection of a passenger station at Albert Lea, Minn., to C. F. Mayer & Co., Humboldt, Ia. The structure is to be of brick with a red tile roof. The cost is estimated at \$30,000.

ELKINS, W. VA.—The Western Maryland has given a contract to the Enterprising Construction Company, Elkins, it is said, to rebuild the freight house at Elkins recently damaged by fire.

HAWKINSVILLE, GA.—The Southern Railway has given a contract to R. V. LaBarre, Birmingham, Ala., for building a new frame passenger station 31 ft. by 88 ft., with tile roof, at Hawkinsville. The present combined passenger station and freight house will be remodeled and used exclusively as a freight house. Some track changes and paving are also included in the work to be carried out.

HURON, S. D.—The report of the Chicago & North Western for the year ended June 30, 1914, shows that the more important additions and betterments carried out during the year include the following: A brick passenger station, also a two-story brick freight house and six additional parallel yard tracks were constructed at Huron, S. Dak. Modern brick passenger stations were completed or are nearing completion at Rochelle, Barrington, Woodstock, Des Plaines and Crystal Lake, Ill.; De Pere and Jefferson, Wis.; Iron River, Mich.; and at Rapid City, Sturgis and Redfield, S. Dak. Combined freight houses and office buildings of brick construction are nearing completion at Green Bay, at Manitowoc, Wis., and at Ironwood, Mich. Other improvements were completed at Green Bay, Wis., consisting of a 40-stall brick engine house, power house, machine shop, store and oil house, and other structures, also additional trackage. Work is now under way at South Pekin, Ill., and at Norfolk, Neb., putting up two-story brick office buildings. Additions were also made during the year at the Chicago shops. The machine shops, power house and store and office buildings at Clinton, Iowa, under construction last year have also been completed, and at Escanaba, Mich., the company's coal dock has been extended 300 ft., and two bridges, each consisting of one truss span 163 ft. long, and connected with present towers, have been installed.

LEXINGTON, KY.—A building permit has been issued to the Louisville & Nashville for the construction of a 12-stall round-house and repair shops in the yard at Lexington, and work on these improvements is now under way.

NORTH TORONTO, ONT.—The Railway Commission of Canada has approved the plans submitted by the Canadian Pacific and the Canadian Northern for a proposed subway to be built at Dovercourt road, North Toronto.

WAYNE, NEB.—The report of the Chicago, St. Paul, Minneapolis & Omaha for the year ended June 30, 1914, shows that a brick passenger station was built at Wayne, Neb.; new frame passenger stations were constructed at Woodville and Solon Springs, Wis., and combined passenger and freight stations were built at Nicols, Minn., and at Wilder. A number of new structures were also put up at Park Falls, Wis. Improvements to the enginehouse facilities at Altoona, Wis., were completed, and a 4-stall brick enginehouse was built at Duluth, Minn. Work is now under way on an 8-stall brick enginehouse, also on a water tank, sand house, cinder pit and turntable at Sioux Falls, S. D. During the year work was finished on the viaduct at Earl street, St. Paul, Minn., and work has been started on a viaduct at Nicholas street, Omaha, Neb., jointly with the Missouri Pacific and the Omaha Bridge & Terminal Railway companies. This work is expected to be finished in the fall of 1914.

Railway Financial News

CENTRAL OF NEW JERSEY.—Frederick G. Bourne, of the Singer Sewing Machine Manufacturing Company, has been elected a director of the Central of New Jersey, succeeding H. C. Fahnestock, deceased.

CHICAGO, ROCK ISLAND & PACIFIC.—N. L. Amster, holding \$350,000 of the railroad collateral 4's, has asked by advertisement that bondholders send him their names and that a meeting of the bondholders be called to select a committee other than the Wallace committee, the new committee to be empowered to co-operate in securing the deposit of bonds as promptly as possible for the purpose of procuring the sale of the stock and its acquisition by the present bondholders; to enforce and receive the distribution of the railway stock represented by their bonds and its deposit with the new committee; to adjust the charges properly payable as their share of the expenses incurred by the trustee in securing the return of their stock; to procure the election of a new board of directors of the railway company that will represent exclusively their interests; to enforce the recovery for their benefit of \$7,500,000 which is claimed to have been improperly paid from the funds of the railway company to the holding company, and which is largely responsible for the present plight of the railway company; to inaugurate a drastic investigation of the accounts and transactions of the past management with a view of further recoveries wherever warranted by the facts; and to provide a plan for financing the future money requirements of the railway company.

ERIE.—Holders of a substantial part of the \$4,550,000 notes matured October 1 accepted 3-year 5 per cent notes in exchange, and the remainder of the new 3-year notes, it is understood, have been sold.

The Erie has asked the New York Public Service Commission, Second district, for permission to issue \$900,000 4½ per cent car trust certificates, series BB. Arrangements have been made for the sale of the notes to Drexel & Company, Philadelphia, at 97.

MAINE CENTRAL.—As shown by the annual report this company, operating 1,207 miles, in the fiscal year ended June 30, 1914, had net income after the payment of expenses, rentals, taxes and interest of \$1,348,061 as compared with \$1,118,544 in 1913. There was a slight increase of 1.43 miles in mileage operated. The road operates a main line from Portland, Maine, to Vanceboro, which is part of the route from Boston to the provinces via the Boston & Maine, the Maine Central and the Canadian Pacific. There are also lines to St. Johnsbury, Vt., Lime Ridge, Que., and Kineo, Rockland, Belfast, Calais and other points in Maine. For some time this road has been controlled by the Boston & Maine, but in April an arrangement was made as noted below whereby the Boston & Maine stock was purchased by Maine Central interests. During the fiscal year just closed the road earned a freight and passenger revenue per mile of \$6,166 and \$3,374 respectively, comparing with \$5,912 and \$3,361 for the previous year. The freight revenue, constituting 63.66 per cent of the total, increased from \$7,126,071 to \$7,440,035. The ton mile rate in 1914 was 1.050 cents, as against 1.086 in 1913, but the ton mileage increased from 656,351,489 to 708,894,306. The tonnage was made up principally of potatoes, coal, lumber, pulp wood, pulp and paper. The passenger receipts showed little change, there having been a slight increase from \$3,511,171 to \$3,517,583. The passenger mileage decreased, but there was an increase in the revenue per passenger mile from 2.083 to 2.184 cents to compensate. The average trainload of revenue freight in 1914 was 271 tons, and in 1913 259. The company in 1914 paid dividends of 6 per cent, which called for \$1,491,797. The net income, however, was but \$1,348,061, so that \$143,736 had to be carried to the contingent fund. The funded debt on June 30, 1914, was \$4,000,000 greater than in 1913, \$6,000,000 of 5-year 5 per cent coupon bonds having been issued on May 1, 1914, to provide funds for the payment of the 5-year coupon notes amounting to \$2,000,000 maturing April 1, 1914; to provide funds for various corporate purposes, and to pay

a note of \$3,000,000 issued to permit the company to pay for the entire \$3,000,000 capital stock at par of the Maine Railway Companies formed to purchase from the Boston & Maine its entire holdings of 159,601 Maine Central shares. At the end of the year the Maine Central had on hand \$704,778 cash, a considerable decrease from the \$1,929,902 of the year before.

MUSCATINE NORTH & SOUTH.—Charles N. Voss and E. H. Ryan have been appointed receivers of this road. The road runs from Muscatine, Iowa, to Burlington, 53 miles.

NEW YORK CENTRAL & HUDSON RIVER.—This company has asked J. P. Morgan & Co., New York, to manage a syndicate to take \$40,000,000 notes, of which half are to be 5 per cent six-months notes and the other half one-year coupon notes. The Wall Street Journal says that the railroad company will secure its money probably, at approximately 7 per cent.

NEW YORK, NEW HAVEN & HARTFORD.—William Rockefeller, George F. Baker, Charles F. Brooker and James S. Elton have resigned as directors of the New York, New Haven & Hartford, and J. Horace Harding, of C. D. Barney & Co., New York, has been elected a director.

NEW YORK, ONTARIO & WESTERN.—This company, operating 568 miles in the fiscal year ended June 30, 1914, had net income, after the payment of expenses, rentals, taxes and interest, of \$663,692, as against \$1,211,633 in the previous year. There was no change in the mileage operated, and the decreased net was due to a loss of 4.37 per cent in gross, an increase of 2.98 per cent in expenses, and a slight loss in other income offset by slightly lower interest charges due to the payment of maturing equipment trust notes. The New York, Ontario & Western is controlled by the New York, New Haven & Hartford. Its main line runs from Weehawken, N. J., opposite New York city, to Oswego, N. Y., with two important branches, one to Scranton, Pa., and the other to Utica, N. Y. In 1914 the road earned \$12,109 from freight and \$3,480 from passenger per mile, comparing with \$12,926 and \$3,470 per mile in 1913. Of the total earnings from freight—\$6,893,176—in 1914, \$4,334,679 was from coal traffic and \$787,339 from milk, with \$1,013,462 from local freight. The falling off in freight revenue was due to a falling off in all classes of freight tonnage, and the slight gain in passenger revenue was due to a higher average passenger-mile rate because of a larger proportion of local passenger business. The ton-mile rate in 1914 was 7.84 mills, as against 7.83 mills in the previous year, the total ton mileage carried being 878,519,133 in 1914, as against 933,144,824 in 1913. The average passenger receipts per passenger-mile in 1914 amounted to 1.970 cents, and in 1913 to 1.934 cents. The average trainload of revenue freight in 1914 was 301, and in 1913 308. The company had been paying two per cent dividends, which called for \$1,162,130. No dividend, however, was declared in 1914, so that the \$663,482 net income was available as working capital, no new securities being sold during the year. At the end of the year the company had on hand \$513,204 cash, with loans and bills payable of \$149,855. The expenditures for additions and betterments in 1914 totaled \$264,179, and for necessary addition to equipment, \$1,016,977.

OLD COLONY RAILROAD.—James Hustis, president of the Boston & Maine, has resigned as a director of the Old Colony, and has been succeeded by Frank A. Farnham.

PERE MARQUETTE.—The first mortgage bondholders have withdrawn their appeal against Judge Tuttle's order in the United States district court permitting the issue of \$4,000,000 receiver's certificates, of the proceeds of which \$2,000,000 was to be used to pay taxes in Michigan and thus avoid a tax penalty of \$5,000 a month. Arrangements for the sale of the certificates have not as yet been made.

THE RAILWAY MILEAGE OF GREAT BRITAIN.—The preliminary returns of the British railways for the year 1913 show that in that year there were 40,689 miles of line open for operation. Of this but 23,718 miles, or 59 per cent, was single track. The preliminary return does not divide this into English and Welsh, Scottish and Irish, but taking the returns for 1912, where it is divided as a basis, it is found that 33 per cent of the English and Welsh, 58 per cent of the Scottish and 80 per cent of the Irish are single-track lines.

[ADVERTISEMENT.]

ANNUAL REPORTS

CHICAGO AND NORTH WESTERN RAILWAY COMPANY

REPORT OF THE BOARD OF DIRECTORS

To the Stockholders of the Chicago and North Western Railway Company:
The Board of Directors submit herewith their report of the operations and affairs of the Chicago and North Western Railway Company for the fiscal year ending June 30, 1914.

Average number of miles operated, 8,070.61.

OPERATING REVENUES:

Freight Revenue	\$53,989,475.43
Passenger Revenue	21,540,542.79
Other Transportation Revenue	7,028,438.19
Non-transportation Revenue	1,118,594.38

Total Operating Revenues	\$83,677,050.79
OPERATING EXPENSES (70.99 per cent. of Operating Revenues)	59,405,141.53

Net Revenue—Rail Operations	\$24,271,909.26
OUTSIDE OPERATIONS—Net Deficit	14,149.85

Net Railway Operating Revenue	\$24,257,759.41
RAILWAY TAX ACCRUALS (5.08 per cent. of Operating Revenues)	4,252,790.29

Railway Operating Income	\$20,004,969.12
OTHER INCOME:	
Rental Income	\$198,540.63
Dividend Income	1,579,236.39
Income from Funded Securities	5,650.00
Income from Unfunded Securities and Accounts, and Other Items	1,137,333.77

Total Other Income	2,920,760.79
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Gross Income, carried forward	\$22,925,729.91
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DEDUCTIONS FROM GROSS INCOME:

Rental Payments	\$1,265,866.98
Interest Deductions for Funded Debt	9,239,007.59
Other Deductions	114,713.13

Total Deductions	10,619,587.70
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Net Income	\$12,306,142.21
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DISPOSITION OF NET INCOME:

Sinking Funds	\$200,472.61
Dividends—	
8% on Preferred Stock	1,791,600.00
7% on Common Stock	9,108,015.00

Total	11,100,087.61
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Balance Income for the year	\$1,206,054.60
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The results as compared with the preceding fiscal year were as follows:

Passenger Revenue increased	\$982,919.54
Non-transportation Revenue increased	394,196.19

Freight Revenue decreased	\$672,112.80
Other Transportation Revenue decreased	63,873.22

735,986.02

Total Operating Revenues increased	\$641,129.71
Operating Expenses increased	\$1,152,361.31
Railway Tax Accruals increased	655,630.49

Operating Expenses and Railway Tax Accruals increased	\$1,807,991.80
Net Deficit from Outside Operations increased	25,446.20

1,833,438.00

Railway Operating Income decreased	\$1,192,308.29
Of the Operating Expenses for the current fiscal year \$33,871,483.08, or 57.02 per cent., was paid employees for Labor, as compared with \$32,911,995.31, or 56.50 per cent., paid during the preceding fiscal year. The increase of \$959,487.77 in the amount paid is accounted for as follows:	
Increase account higher rates of compensation	\$534,506.41
Increase account more time worked	424,981.36

\$959,487.77

MILES OF RAILROAD

The total number of miles of railroad owned June 30, 1914, was 7,945.50 miles

In addition to which the company operated:

THROUGH OWNERSHIP OF ENTIRE CAPITAL STOCK—	
Wolf River Valley Railway (Junction east of Elton to Van Ostrand, Wis.)	1.98 "

UNDER LEASE—

De Pue, Ladd & Eastern Railroad (Ladd to Seatonville, Ill.)	3.25 miles
Belle Fourche Valley Railway (Belle Fourche to Newell, S. D.)	23.52 "
James River Valley and North Western Railway (Blunt to Gettysburg, S. D.)	39.55 "
Macoupin County Extension Railway (Benld to Staunton, Ill.)	4.36 "

70.68 "

UNDER TRACKAGE RIGHTS—

Peoria & Pekin Union Railway (in the city of Peoria, Ill.)	2.02 "
Chicago, Indiana & Southern Railroad (Churchill to Ladd, Ill.)	2.80 "
Union Pacific Railroad (Broadway Station, Council Bluffs, Iowa, to South Omaha, Neb.)	8.73 "
Missouri Valley and Blair Railway and Bridge Company's track	3.36 "
Chicago, St. Paul, Minneapolis & Omaha Railway:	
Blair to Omaha, Neb.	24.70 "
Elroy to Wyeville, Wis.	22.79 "
In Sioux City, Iowa.	2.28 "
Illinois Central Railroad (Sioux City to Wren, Iowa)	10.10 "

76.78 "

Total miles of railroad operated June 30, 1914

The above mileage is located as follows:

In Illinois	824.53 miles
In Wisconsin	2,170.03 "
In Michigan	519.88 "
In Minnesota	650.30 "
In Iowa	1,620.26 "
In North Dakota	14.28 "
In South Dakota	1,063.15 "
In Nebraska	1,102.05 "
In Wyoming	130.46 "

Total

FREIGHT TRAFFIC

The details of Freight Traffic for the year ending June 20, 1914, compared with the preceding year, were as follows:

	1913	1914	Amount	Per Cent.
FREIGHT REVENUE	\$54,661,588.23	\$53,989,475.43	\$672,112.80	1.23
				Percentage of Increase or Decrease
TONS OF FREIGHT CARRIED	44,839,071	43,309,643		3.41 Decrease
TONS OF FREIGHT CARRIED ONE MILE	6,282,916,222	6,229,944,171		.84 Decrease
AVERAGE REVENUE RECEIVED PER TON	\$1.22	\$1.25		2.46 Increase
AVERAGE REVENUE RECEIVED PER TON PER MILE .....	.87 of a cent	.87 of a cent		
AVERAGE DISTANCE EACH TON WAS HAULED	140.12 miles	143.85 miles		2.66 Increase
MILEAGE OF REVENUE FREIGHT AND MIXED TRAINS	18,055,815	17,922,137		.74 Decrease
AVERAGE NUMBER OF TONS OF REVENUE FREIGHT CARRIED PER TRAIN MILE:				
East of Missouri River	375.38	377.64		.60 Increase
West of Missouri River	148.68	152.26		2.41 Increase
Whole Road	347.97	347.61		.10 Decrease
AVERAGE NUMBER OF TONS OF REVENUE FREIGHT CARRIED PER LOADED CAR MILE	18.38	18.44		.33 Increase
AVERAGE FREIGHT REVENUE PER TRAIN MILE	\$3.03	\$3.01		.66 Decrease

PASSENGER TRAFFIC

The details of Passenger Traffic for the year ending June 30, 1914, compared with the preceding year, were as follows:

	1913	1914	Amount	Per Cent.
PASSENGER REVENUE	\$20,557,623.25	\$21,540,542.79	\$982,919.54	4.78
				Percentage of Increase or Decrease
PASSENGERS CARRIED	32,441,450	33,389,428		2.92 Increase
PASSENGERS CARRIED ONE MILE	1,113,831,352	1,173,435,140		5.35 Increase
AVERAGE FARE PAID PER PASSENGER	63 cents	65 cents		3.17 Increase
AVERAGE RATE PAID PER PASSENGER PER MILE	1.85 cents	1.84 cents		.54 Decrease
AVERAGE DISTANCE TRAVELED PER PASSENGER	34.33 miles	35.14 miles		2.36 Increase
MILEAGE OF REVENUE PASSENGER AND MIXED TRAINS	21,378,704	21,537,781		.74 Increase
AVERAGE PASSENGER-TRAIN REVENUE PER TRAIN MILE	\$1.23	\$1.26		2.44 Increase

MAINTENANCE OF WAY AND STRUCTURES

The total Operating Expenses of the Company for the year ending June 30, 1914, were \$59,405,141.53; of this amount \$12,179,689.85 was for charges pertaining to the Maintenance of Way and Structures. Included in these charges is a large part of the cost of 82,741 tons of steel rails, the greater portion of which was laid in replacement of rails of lighter weight in 600.62 miles of track; also the cost of 3,041,197 new ties.

The charges for Maintenance of Way and Structures also include a portion of the cost of ballasting 89.51 miles of track with crushed stone.

343.75 miles with gravel, and 16.92 miles with cinders; the erection, in place of wooden structures, of 42 new steel bridges on masonry aggregating 3,846 feet in length and containing 3,858 tons of bridge metal; and the replacement of other wooden structures with masonry arch and box culverts and cast-iron pipes, the openings being filled with earth. The wooden structures replaced by permanent work aggregate 11,396 feet in length.

The charges on account of Maintenance of Way and Structures for the year ending June 30, 1914, compared with the preceding year, were as follows:

COST OF RAILS:	1913	1914	Increase or Decrease
New steel rails.....	\$1,608,212.85	\$1,212,258.90	\$395,953.95 Dec.
Usable and re-rolled rails..	589,407.15	996,460.61	407,053.46 Inc.
	<u>\$2,197,620.00</u>	<u>\$2,208,719.51</u>	<u>\$11,099.51 Inc.</u>
Less value of old rails and other items	1,582,238.40	1,484,363.53	97,874.87 Dec.
Net charge for rails....	\$615,381.60	\$724,355.98	\$108,974.38 Inc.
COST OF TIES.....	1,398,359.45	1,762,313.18	363,953.73 Inc.
COST OF BALLAST.....	193,644.46	227,056.25	33,411.79 Inc.
COST OF OTHER TRACK MATERIAL	525,805.53	539,118.33	13,312.80 Inc.
ROADWAY AND TRACK LABOR AND OTHER EXPENSES.....	4,949,338.52	5,073,539.12	124,200.60 Inc.
Total Charges for Roadway and Track	\$7,682,529.56	\$8,326,382.86	\$643,853.30 Inc.
Other Charges Account Maintenance of Way and Structures were as follows:			
BRIDGES, TRESTLES AND CULVERTS	854,794.52	945,128.70	90,334.18 Inc.
ROAD CROSSINGS, FENCES, ETC.	325,226.84	331,200.62	5,973.78 Inc.
SIGNALS AND INTERLOCKING PLANTS	444,175.32	451,960.43	7,785.11 Inc.
BUILDINGS, FIXTURES AND GROUNDS	1,175,886.10	1,229,244.45	53,358.35 Inc.
DOCKS AND WHARVES.....	214,950.50	53,975.41	160,975.09 Dec.
SUPERINTENDENCE	483,468.65	489,352.50	5,883.85 Inc.
ROADWAY TOOLS AND SUPPLIES	139,863.67	150,540.57	10,676.90 Inc.
SUNDRY MISCELLANEOUS CHARGES	180,291.27	201,904.31	21,613.04 Inc.

Total Charges Account Maintenance of Way and Structures\$11,501,186.43 \$12,179,689.85 \$678,593.42 Inc.

The above charges for Maintenance of Way and Structures for the current year amount to 20.50 per cent. of the total Operating Expenses, as compared with 19.74 per cent. for the preceding fiscal year.

MAINTENANCE OF EQUIPMENT

The charges on account of Maintenance of Equipment for the year ending June 30, 1914, compared with the preceding year, were as follows:

	1913	1914	Increase or Decrease
LOCOMOTIVES	\$4,688,207.05	\$4,831,466.36	\$143,259.31 Inc.
PASSENGER-TRAIN CARS	1,088,442.30	1,070,046.73	9,395.47 Dec.
FREIGHT-TRAIN CARS	5,016,122.00	5,445,489.09	429,367.09 Inc.
WORK EQUIPMENT	132,975.41	143,446.64	10,471.23 Inc.
SHOP MACHINERY AND TOOLS	229,505.27	229,921.15	415.88 Inc.
SUPERINTENDENCE	335,106.49	358,660.57	23,554.08 Inc.
SUNDRY MISCELLANEOUS CHARGES	78,137.67	99,092.63	20,954.96 Inc.

Total Charges Account Maintenance of Equipment\$11,568,496.09 \$12,187,123.17 \$618,627.08 Inc.

The above charges for Maintenance of Equipment for the current year amount to 20.52 per cent. of the total Operating Expenses, as compared with 19.86 per cent. for the preceding fiscal year.

RESERVE FOR ACCRUED DEPRECIATION ON EQUIPMENT

At the close of the preceding fiscal year there was a balance to the credit of the Equipment Reserve Accounts of..... \$4,665,712.28

During the year ending June 30, 1914, there was credited to the Equipment Reserve Accounts on account of charges to Operating Expenses and Profit and Loss, and for salvage.... 3,336,032.63

\$8,001,744.91

And there were charged during the year against the above amount the original cost of Equipment retired and other items, as follows:

17 Locomotives	\$148,486.01
7 Passenger-Train Cars	28,610.67
2,467 Freight-Train Cars	1,360,288.60
172 Work Equipment Cars.....	31,141.18
Other Items	343,979.08

1,912,505.54

Leaving a balance to the credit of the Equipment Reserve Accounts on June 30, 1914, of..... \$6,089,239.37

TRANSPORTATION EXPENSES

The Transportation Expenses of the Company for the year ending June 30, 1914, were \$31,941,194.36, or 53.77 per cent. of the total Operating Expenses. Of this amount \$19,862,352.33, or 62.18 per cent., was charged for labor; \$6,905,727.12, or 21.62 per cent., was charged for fuel for locomotives; and \$5,173,114.91, or 16.20 per cent., was charged for supplies and miscellaneous items. The decrease in the Transportation Expenses for the year ending June 30, 1914, as compared with the preceding fiscal year, was \$300,063.32 or .93 per cent., distributed as follows:

Increase in amount charged for labor.....	\$236,274.32
Decrease in amount charged for fuel for locomotives..	1,020,161.01
Increase in amount charged for supplies and miscellaneous items	483,823.37

\$300,063.32

CAPITAL STOCK

There was no change during the year in the Capital Stock and Scrip of the Company.

The Company's authorized Capital Stock is Two Hundred Million Dollars (\$200,000,000.00), of which the following has been issued to June 30, 1914:

Common Stock and Scrip held by the Public.....	\$130,117,028.82
Common Stock and Scrip owned by the Company	2,338,502.15
Total Common Stock and Scrip.....	\$132,455,530.97
Preferred Stock and Scrip held by the Public.....	\$22,395,120.00
Preferred Stock and Scrip owned by the Company	3,834.56
Total Preferred Stock and Scrip.....	22,398,954.56
Total Capital Stock and Scrip, June 30, 1914.....	\$154,854,485.53

FUNDED DEBT

At the close of the preceding fiscal year the amount of Bonds held by the Public and in Sinking Funds was..... \$193,259,000.00

The above amount has been decreased during the year ending June 30, 1914, as follows:

BONDS PURCHASED:	
C. & N. W. Ry. 5% Sinking Fund Debentures of 1933	\$4,000.00
EQUIPMENT TRUST CERTIFICATES REDEEMED:	
C. & N. W. Ry. 4½% Equipment Trust Certificates of 1912, Series B.....	300,000.00
BONDS REDEEMED WITH SINKING FUND PAYMENTS:	
C. & N. W. Ry. Sinking Fund of 1879, 6%	\$37,000.00
C. & N. W. Ry. Sinking Fund of 1879, 5%	93,000.00
	<u>130,000.00</u>
Total Bonds Purchased or Redeemed.....	434,000.00
	<u>\$192,825,000.00</u>

And the above amount has been increased by Bonds and Equipment Trust Certificates sold and assumed during the year, as follows:

C. & N. W. Ry. General Mortgage Gold Bonds of 1987, 4%, sold to reimburse the Company for past expenditures made for construction and in redeeming matured bonds	\$8,054,000.00
C. & N. W. Ry. 4½% Equipment Trust Certificates of 1912, Series C, sold.....	4,000,000.00
St. Louis, Peoria and North Western Ry. 5% First Mortgage Bonds assumed.....	10,000,000.00
	<u>22,054,000.00</u>

Total Bonds held by the Public and in Sinking Funds, June 30, 1914..... \$214,879,000.00

Net Increase during the year in Bonds held by the Public and in Sinking Funds..... \$21,620,000.00

BONDS IN THE TREASURY AND DUE FROM TRUSTEE

At the close of the preceding fiscal year the amount of the Company's Bonds in its Treasury and due from Trustee was..... \$7,519,000.00

The above amount has been increased during the year ending June 30, 1914, as follows:

C. & N. W. Ry. 5% SINKING FUND DEBENTURES OF 1933, PURCHASED.....	\$4,000.00
C. & N. W. Ry. 4½% EQUIPMENT TRUST CERTIFICATES OF 1913, SERIES D, ISSUED.....	4,000,000.00
C. & N. W. Ry. GENERAL MORTGAGE GOLD BONDS OF 1987, DUE FROM TRUSTEE IN EXCHANGE FOR BONDS RETIRED, VIZ:	
C. & N. W. Ry. Sinking Fund of 1879, 6%	\$41,000.00
C. & N. W. Ry. Sinking Fund of 1879, 5%	94,000.00
M. L. S. & W. Ry. Extension and Improvement Sinking Fund Mortgage, 5%	11,000.00
	<u>146,000.00</u>
C. & N. W. Ry. GENERAL MORTGAGE GOLD BONDS OF 1987, DUE FROM TRUSTEE ON ACCOUNT OF CONSTRUCTION EXPENDITURES MADE DURING THE YEAR.....	1,000,000.00
	<u>5,150,000.00</u>
	<u>\$12,669,000.00</u>

The Bonds on hand and due from Trustee have been decreased during the year, as follows:

C. & N. W. Ry. GENERAL MORTGAGE GOLD BONDS OF 1987, 4%, SOLD TO REIMBURSE THE COMPANY FOR PAST EXPENDITURES MADE FOR CONSTRUCTION AND IN REDEEMING MATURED BONDS	\$8,054,000.00
SOUTHERN IOWA RY. FIRST MORTGAGE, 3½% BONDS, CANCELED	431,000.00
M. L. S. & W. Ry. EXTENSION AND IMPROVEMENT SINKING FUND MORTGAGE 5% BONDS RETIRED	11,000.00
	<u>8,496,000.00</u>

Total Bonds in the Treasury and due from Trustee, June 30, 1914..... \$4,173,000.00

Net Decrease during the year in Bonds in the Treasury and due from Trustee..... \$3,346,000.00

CONSTRUCTION

The construction charges for the year ending June 30, 1914, were as follows:

ON ACCOUNT OF ELEVATING TRACKS, VIZ.:

In River Forest, Illinois.....	\$124,384.93
Greenfield Avenue north, Milwaukee, Wis...	61,161.83

\$185,546.76

SUNDRY CONSTRUCTION:

Right of Way and Additional Depot and Yard Grounds	\$184,532.21
Buildings and Fixtures.....	1,069,551.05
Shop Machinery and Tools.....	137,992.00
Ridges, Trestles and Culverts.....	823,210.81
Interlocking, Block and Other Signal Apparatus	481,452.24
Improvement of Grade Crossings.....	102,321.98
Reduction of Grade between Nelson and Peoria, Ill.	69,629.21
Betterment of Roadway and Track.....	1,073,570.59
Miscellaneous Construction, including Terminal Yards, Docks and other items.....	196,281.44

4,138,541.53

EQUIPMENT:

30 Locomotives, 66 Steel, Passenger-Train Cars, 1,000 Freight-Train Cars and 4 Work Equipment Cars	\$2,088,737.07
Improvement of Equipment.....	397,860.75
Trust Equipment of 1912 added—	
4 Locomotives and 4,005 Freight-Train Cars	4,005,925.04
Trust Equipment of 1913 added—	
71 Locomotives, 67 Steel, Passenger-Train Cars and 2,035 Freight-Train Cars.....	4,007,414.31

\$10,499,937.17

Less Equipment retired..... 1,912,505.54

8,587,431.63

\$12,911,519.92

Account Cost of Milwaukee, Sparta and North Western Rail-

60,604.91

Account Cost of Des Plaines Valley Railway.....

4,483.50

Account Cost of St. Louis, Peoria and North Western Rail-

9,896,745.59

\$22,873,353.92

TRACK ELEVATION

The elevation of the Company's six main tracks on the Galena Division in the Village of River Forest, Illinois, from the overhead crossing of the Minneapolis, St. Paul & Sault Ste. Marie Railway to the Des Plaines River, a distance of 0.6 miles, and the construction of an elevated yard with a capacity for 300 cars, are in progress and it is expected will be completed during the present calendar year.

At Milwaukee, Wisconsin, the Company has undertaken the elevation of the main tracks and certain yard tracks of its Wisconsin Division, from the Kinnickinnic River to the Milwaukee River, a distance of 1.04 miles, and also the elevation of the main tracks and certain yard tracks of its Madison Division from Kinnickinnic Avenue north to a connection with the Wisconsin Division, near Mineral Street, a distance of 0.77 miles. In connection with the elevation of the existing tracks, provision has been made for the construction of two additional tracks on the Wisconsin Division. This work includes the construction of subways on the Wisconsin Division at Washington Street and National Avenue, and on the Madison Division at Greenfield Avenue and Washington Street. The total miles of main, yard and side tracks to be elevated are equivalent to 14.81 miles of single track railway.

SUNDRY ADDITIONS AND BETTERMENTS

Among the more important sundry additions and betterments to the property of the Company during the fiscal year are the following:

Modern brick passenger stations have been completed, or are nearing completion, at Rochelle, Barrington, Woodstock, Des Plaines, and Crystal Lake, Illinois; De Pere and Jefferson, Wisconsin; Iron River, Michigan; and at Rapid City, Sturgis, and Redfield, South Dakota.

At Huron, South Dakota, a commodious brick passenger station, two-story brick freight house 40 feet x 212 feet, and six additional parallel yard tracks have been constructed.

At Green Bay, Wisconsin, a brick freight house 40 feet x 250 feet with two-story office portion 40 feet x 50 feet; at Manitowoc, Wisconsin, a brick freight house with two-story office portion 40 feet x 180 feet; and at Ironwood, Michigan, a brick freight house 41 feet x 131 feet with office portion at one end, are nearing completion.

At South Pekin, Illinois, and at Norfolk, Nebraska, two-story brick office buildings are being constructed.

At Chicago Shops the following additions to the plant have been completed:

Enlargement of Wisconsin Division engine house.
Brick extension to locomotive tank shop 30 feet x 324 feet.
Enclosing of space 66 feet x 300 feet between Car Shops 1 and 2.
Brick extension to coach paint shop 14 feet x 300 feet.
Installation of two 70-foot electric transfer tables for coaches, and one 38-foot electric transfer table for locomotives.

Also at Chicago shops, a considerable expenditure has been made for the installation of a sprinkler system, the erection of fire walls and the rearrangement and enlargement of the facilities for supplying water, in order to provide for additional fire protection and thereby reduce the cost of insurance.

At Green Bay, Wisconsin, the improvements consisting of a 40-stall brick engine house, power house, machine shop, store and oil house, ice house, coal and water facilities, and additional trackage, to which reference was made in the last annual report, have been completed.

At Clinton, Iowa, the machine shops, power house and store and office buildings under construction at the close of the previous fiscal year, have been completed. The installation at this station of a car repair yard with suitable shop and other buildings is in progress.

At Escanaba, Michigan, the Company's coal dock has been extended 300 feet and two bridges, each consisting of one truss span 163 feet long, and connected with present towers, have been installed.

Between Nelson and Peoria, Illinois, important revisions of grade, to permit a material increase in the train tonnage on this line, are in progress.

Reference was made in the last annual report to the stockholders, to an agreement with the City of Milwaukee, Wisconsin, by which the Company acquired the right to fill in and occupy with additional tracks, approximately ten acres of submerged lands east of its present holdings on the shore of Lake Michigan in that city. During the year covered by this report substantial progress has been made in the filling, and a protection crib has been completed.

The installation of automatic block signals has been completed during the year, or is nearing completion, as follows:

Evansville to Madison, Wisconsin.....	22.5 miles
Baraboo to Elroy, Wisconsin.....	37.3 "
Fond du Lac to Duck Creek, Wisconsin.....	69.0 "
Missouri Valley to Sioux City, Iowa.....	74.7 "
Ames to Des Moines, Iowa.....	34.0 "

Between Clybourn and Mayfair, Illinois, and between Elmhurst and West Chicago, Illinois, new upper quadrant semaphore signals are being installed in place of disc signals. Upon completion of the work now in progress, 1,135 miles of the Company's railway will be protected by automatic signals.

NEW RAILWAYS

The ST. LOUIS, PEORIA AND NORTH WESTERN RAILWAY COMPANY, organized in the interest of this Company and owning a railroad from near Peoria to the Company's coal fields in Macoupin County, Illinois, a distance of 114.64 miles, conveyed its entire property to the Chicago and North Western Railway Company on December 15, 1913, subject to an indebtedness consisting of \$10,000,000 First Mortgage 5% Gold Bonds, payable July 1, 1948, which were assumed by the Chicago and North Western Railway Company.

The MACOUPIN COUNTY EXTENSION RAILWAY COMPANY, organized in the interest of this Company to construct a railway from a connection with the Macoupin County Railway near Benld, in a general southerly direction for a distance of about 9 miles, to reach certain coal fields under development in Macoupin and Madison counties, Illinois, has been completed during the year from Benld to Staunton, a distance of 4.36 miles. This railway was leased to the Chicago and North Western Railway Company for a term of twenty-five years beginning January 1, 1914.

The IOWA SOUTHERN RAILWAY COMPANY, organized in the interest of this Company, to construct a railway from a connection with this Company's railway in Monroe County, Iowa, in a general southwesterly direction in that county, for a distance of about 25 miles, has been practically completed during the year from a connection with the Chicago and North Western Railway at Miami, Iowa, to the Company's coal fields in Monroe County, a distance of 12.25 miles. This railway was leased to the Chicago and North Western Railway Company for a term of twenty-five years beginning July 1, 1914.

LANDS

During the year ending June 30, 1914, 8,809.93 acres and 83 town lots of the Company's Land Grant lands were sold for the total consideration of \$245,862.52. The number of acres remaining in the several Grants June 30, 1914, amounted to 330,434.65 acres, of which 18,030.19 acres were under contract for sale, leaving unsold 312,404.46 acres.

Appended hereto may be found statements, accounts and statistics relating to the business of the fiscal year, and the condition of the Company's affairs on June 30, 1914.

By order of the Board of Directors.

WILLIAM A. GARDNER,
President.

PROFIT AND LOSS ACCOUNT, JUNE 30, 1914

Dr.	
Depreciation accrued prior to July 1, 1907, on equipment retired or changed from one class to another during the current fiscal year.....	\$1,013,396.85
Net loss on property sold or abandoned and not replaced....	62,288.48
Debt discount extinguished through surplus.....	844,497.20
Balance Credit, June 30, 1914, carried to Balance Sheet.....	35,998,882.89
	\$37,919,065.42

	Cr.
Balance, June 30, 1913.....	\$36,438,744.36
Balance Income for year ending June 30, 1914, brought forward from Income Account.....	1,206,054.60
Amount transferred from "Appropriated Surplus" on account of the retirement of Madison Extension and Menominee Extension First Mortgage Sinking Fund Bonds.....	180,678.20
Adjustments in sundry accounts, etc.....	93,588.26
	\$37,919,065.42

(7,945:50 Miles)

COMPARATIVE STATEMENT OF INCOME ACCOUNT

Income from Unfunded Securities and Accounts, and Other Items	1,381,927.54	1,137,333.77	—244,593.77
Total Other Income....	\$3,463,491.91	\$2,920,760.79	—\$542,731.12
Gross Income	\$24,660,769.32	\$22,925,729.91	—\$1,735,039.41
DEDUCTIONS FROM GROSS INCOME:			
Rental Payments	1,194,268.52	1,265,866.98	71,598.46
Interest Deductions for			
Funded Debt	8,529,266.49	9,239,007.59	709,741.10
Other Deductions	62,220.84	114,713.13	52,492.29
Total Deductions	\$9,785,755.85	\$10,619,587.70	—\$833,831.85
Net Income	\$14,875,013.47	\$12,306,142.21	—\$2,568,871.26
DISPOSITION OF NET INCOME:			
Sinking Funds	199,990.75	200,472.61	481.86
Dividends—			
8% on Preferred Stock...	1,791,600.00	1,791,600.00	.....
7% on Common Stock....	9,108,015.00	9,108,015.00	.....
Total	\$11,099,605.75	\$11,100,087.61	\$481.86
Balance Income for the year, carried to Profit and Loss	\$3,775,407.72	\$1,206,054.60	—\$2,569,353.12

REPORT OF THE BOARD OF DIRECTORS

Freight revenue	\$11,427,563.24
Passenger revenue	5,415,710.19
Other transportation revenue	1,036,609.69
Non-transportation revenue	112,487.47
	<hr/>
Total operating revenue	\$17,992,370.59

OPERATING EXPENSES (70.21 per cent of operating revenues)	12,632,570.52
Net revenue—Rail Operations	\$5,359,800.07
OUTSIDE OPERATIONS (net revenue)	16,166.40
Net Railway operating revenue	\$5,375,966.47
RAILWAY TAX ACCRUALS (5.41 per cent of operating revenue)	973,282.83
Railway operating income	\$4,402,683.64
OTHER INCOME	
Rental income	\$134,921.94
Dividend income	46,351.00
Income from funded securities	12,060.00
Income from unfunded securities and accounts, and other items	40,072.08
Total other income	233,405.02
Gross income	\$4,636,088.66
DEDUCTIONS FROM GROSS INCOME	
Rental payments	\$515,184.10
Interest deductions for funded debt	2,052,901.43
Interest deductions for unfunded debt	32,735.53
Other deductions	13,652.25
Total deductions	2,614,473.31
Net income	\$2,021,615.35
DISPOSITION OF NET INCOME	
Dividends:	
7% on preferred stock	\$787,976.00
7% on common stock	1,298,934.00
Total dividends	2,086,910.00
Net deficit for the year	\$65,294.65
As compared with the previous year, the results were as follows:	
Freight revenue increased	\$570,356.31
Passenger revenue increased	431,114.88
Non-transportation revenue increased	18,149.03
Other transportation revenue decreased	20,254.31
Total operating revenue increased	\$999,365.91
Operating expenses increased	\$745,109.24
Railway tax accruals increased	141,019.56
Operating expenses and railway tax accruals increased	\$886,128.80
Net revenue from outside operations increased	20,978.02
Railway operating income increased	\$134,215.13

The operating expenses for the current fiscal year include \$6,895,806.12 paid employees for labor, as compared with \$6,720,074.48 paid during the preceding fiscal year, being an increase of \$175,731.64, accounted for as follows:

Increase account higher rates of compensation	\$51,924.14
Increase account more time worked	123,807.50
Total increase	\$175,731.64

MILES OF RAILROAD

The total number of miles of railroad owned June 30, 1914, was	1,683.22 miles
In addition to which the company operated:	
Under Trackage Rights—	
Northern Pacific Railway (Superior, Wis., to Rice Point, Minn.)	1.59 miles
Great Northern Railway (St. Paul to Minneapolis, Minn.)	11.40 "
Minneapolis & St. Louis Railroad (Minneapolis to Merriam, Minn.)	27.00 "
Illinois Central Railroad (LeMars to Sioux City, Iowa)	25.20 "
Sioux City Bridge Company (bridge across Missouri River and tracks at Sioux City, Iowa)	3.90 "
Chicago and Northwestern Railway (Sioux City to Sioux City Bridge Company's track) .....	.50 "
Total miles of railroad operated June 30, 1914	1,752.81 "
The above mileage is located as follows:	
In Wisconsin	781.14 miles
In Minnesota	473.04 "
In Iowa	102.04 "
In South Dakota	88.20 "
In Nebraska	308.39 "
Total	1,752.81 "
In addition to the foregoing, the company owned and operated 183.03 miles of second track, located as follows:	
In Wisconsin	157.09 miles
In Minnesota	24.23 "
In Nebraska	1.71 "
Total	183.03 "

FREIGHT TRAFFIC

The details of freight traffic for the year ending June 30, 1914, compared with the preceding year, were as follows:	
Freight revenue	1913 \$10,857,206.93 1914 \$11,427,563.24 INCREASE Amount Per Cent \$570,356.31 5.25
Tons of freight carried	1913 8,205,947 1914 8,466,632 INCREASE 3.18
Tons of freight carried one mile	1,262,998,028 1,294,143,291 INCREASE 2.47

Average revenue received per ton	\$1.32	\$1.35	2.27 Increase
Average revenue received per ton per mile .....	.86 of a cent	.88 of a cent	2.33 Increase
Average distance each ton was hauled	153.91 miles	152.85 miles	.69 Decrease
Mileage of revenue freight and mixed trains	4,575,954	4,212,289	7.95 Decrease
Average number of tons of revenue freight carried per train mile	276.01	307.23	11.31 Increase
Average number of tons of revenue freight carried per loaded car mile	18.99	19.23	1.26 Increase
Average freight revenue per train mile	\$2.37	\$2.71	14.35 Increase

PASSENGER TRAFFIC

The details of passenger traffic for the year ending June 30, 1914, compared with the preceding year, were as follows:

Passenger revenue	1913 \$4,984,595.31 1914 \$5,415,710.19 INCREASE Amount Per Cent \$431,114.88 8.65
Passengers carried	1913 4,500,947 1914 4,881,961 INCREASE 8.47
Passengers carried one mile	234,545,623 266,685,999 INCREASE 13.70
Average fair paid per passenger	110.75 cents 110.93 cents INCREASE .16
Average rate paid per passenger per mile	2.125 cents 2.031 cents INCREASE 4.42
Average distance traveled per passenger	52.11 miles 54.63 miles INCREASE 4.84
Mileage of revenue passenger and mixed trains	4,489,183 4,510,639 INCREASE .48
Average passenger train revenue per train mile	\$1.31 \$1.39 INCREASE 6.11

MAINTENANCE OF WAY AND STRUCTURES

The total operating expenses of the company for the year ending June 30, 1914, were \$12,632,570.52; of this amount \$2,612,609.99 was for charges pertaining to maintenance of way and structures. Included in these charges are \$168,965.84 for rails, \$525,024.76 for ties, and the cost of re-ballasting 70 miles with gravel and cinders, also part cost of replacing 1,514 feet of wooden bridging with permanent work.

During the year 12,395 tons of new steel rails and 6,188 tons of usable and re-rolled steel rails were laid in track, a greater portion of which replaced rails of lighter weight; 843,544 ties of all descriptions were laid in renewals.

The details of the charges to maintenance of way and structures for the year, compared with the previous year, were as follows:

COST OF RAILS			
New steel rail	\$398,243.49	\$392,057.11	*\$6,186.38
Usable and re-rolled rail	279,678.91	143,572.52	*136,106.39
Less value of old rails and other items	677,922.40	535,629.63	*142,292.77
Net charge for rails	\$203,737.34	\$168,965.84	*\$34,771.50
COST OF TIES	326,294.47	525,024.76	198,730.29
COST OF BALLAST	34,448.52	51,996.80	17,548.28
COST OF OTHER TRACK MATERIAL	99,577.84	89,442.67	*10,135.17
ROADWAY AND TRACK LABOR AND OTHER EXPENSES	788,989.71	860,749.04	71,759.33
Total charges for Roadway and Track	\$1,453,047.88	\$1,696,179.11	\$243,131.23
Other Expenses Account of Maintenance of Way and Structures were as follows:			
SUPERINTENDENCE	89,095.57	108,713.97	19,618.40
BRIDGES, TRESTLES AND CULVERTS	228,478.02	295,994.49	67,516.47
ROAD CROSSINGS, FENCES, ETC.	54,627.14	70,010.91	15,383.77
SIGNALS AND INTERLOCKING PLANTS	20,629.17	30,288.21	9,659.04
BUILDINGS, FIXTURES AND GROUNDS	239,467.58	243,322.66	3,855.08
DOCKS AND WHARVES	1,043.85	2,636.23	1,592.38
ROADWAY TOOLS AND SUPPLIES	23,742.77	23,742.73	*.04
SUNDRY MISCELLANEOUS CHARGES	98,161.62	141,721.68	43,560.06
Total charges account of Maintenance of Way and Structures	\$2,208,293.60	\$2,612,609.99	\$404,316.39

*Decrease.

The foregoing expenditures for maintenance of way and structures for the current year amount to 20.68 per cent of the total operating expenses, as compared with 18.58 per cent for the preceding fiscal year.

MAINTENANCE OF EQUIPMENT

The charges on account of maintenance of equipment for the year ending June 30, 1914, compared with the preceding year, were as follows:

Locomotives	1913 \$897,790.57 1914 \$920,442.73 INCREASE \$22,652.16
Passenger-train cars	263,636.58 273,896.38 10,259.80
Freight-train cars	870,962.72 924,113.26 53,150.54
Work equipment	33,649.40 33,067.42 *581.98
Shop machinery and tools	29,937.33 33,788.02 3,850.69
Superintendence	59,815.81 62,988.77 3,172.96
Sundry miscellaneous charges	33,153.65 35,629.63 2,475.98

Total charges account of Maintenance of Equipment

*Decrease.

The above charges for maintenance of equipment for the current year amount to 18.08 per cent of the total operating expenses, as compared with 18.41 per cent for the preceding fiscal year.

RESERVE FOR ACCRUED DEPRECIATION ON EQUIPMENT

At the close of the preceding fiscal year there was a balance to the credit of the equipment reserve accounts of

\$1,321,312.99

During the year ending June 30, 1914, there was credited to the equipment reserve accounts on account of charges to Operating Expenses and Profit and Loss, and for Salvage..

757,580.72

\$2,078,893.71

There was charged during the year against the above amount the original cost of equipment retired as follows:

9 Locomotives \$85,500.00
7 Passenger-train cars 39,792.00
661 Freight-train cars 379,428.89

504,720.89

Leaving a balance to the credit of the equipment reserve accounts on June 30, 1914, of.....

\$1,574,172.82

TRANSPORTATION EXPENSES

The transportation expenses for the year were \$6,939,604.01, or 54.93 per cent of the total operating expenses. Of this amount \$3,825,879.76, or 55.13 per cent, was for labor; \$2,044,091.93, or 29.46 per cent, was for fuel for locomotives; and \$1,069,632.22, or 15.41 per cent, was for supplies and other items.

The total increase in the charges as compared with the previous year was \$192,812.47, distributed as follows:

Increase in amount charged for labor..... \$31,645.45
Increase in amount charged for fuel for locomotives..... 17,659.88
Increase in amount charged for supplies and other items..... 143,507.14

Total increase \$192,812.47

CAPITAL STOCK

No stock was issued or sold during the year. The company's authorized capital stock is fifty million dollars (\$50,000,000), of which the following has been issued to June 30, 1914:

Common stock and scrip held by the public... \$18,559,086.69
Common stock and scrip in treasury..... 2,844,206.64

\$21,403,293.33

Preferred stock and scrip held by the public... \$11,259,911.63
Preferred stock and scrip in treasury..... 1,386,921.66

12,646,833.29

Total \$34,050,126.62

FUNDED DEBT

At the close of the preceding fiscal year the amount of bonds held by the public was.....

\$37,547,000.00

The above amount has been increased by bonds sold during the year ending June 30, 1914, as follows:

Chicago, Saint Paul, Minneapolis and Omaha
Railway Consolidated Mortgage Bonds of
1880, 6% \$90,000.00
Debenture Golds Bonds of 1930, 5%..... 1,700,000.00

1,790,000.00

Total bonds held by the Public, June 30, 1914.....

\$39,337,000.00

In addition to the foregoing, Chicago, Saint Paul, Minneapolis and Omaha Railway Consolidated Mortgage 6% Bonds of 1880 were issued for a like amount of the following underlying bonds retired:

Chicago, Saint Paul and Minneapolis Rail-
way First Mortgage of 1878, 6%..... \$55,000.00
North Wisconsin Railway First Mortgage of
1880, 6% 9,000.00

\$64,000.00

BONDS IN THE TREASURY

On June 30, 1913, the amount of the company's bonds and scrip in the treasury was.....

\$51,046.02

The amount of bonds and scrip was increased during the year as follows:

Chicago, Saint Paul, Minneapolis and Omaha Railway Con-
solidated Mortgage Bonds of 1880, issued at the rate of
\$15,000 per mile on the extension of the line from Kaiser
to Park Falls, Wis., a distance of 5 5135/5280 miles....

89,588.07

Total \$140,634.09

The above amount was decreased by bonds sold during the year, as follows:

Chicago, Saint Paul, Minneapolis and Omaha Railway Con-
solidated Mortgage 6% Bonds of 1880.....

90,000.00

Total bonds and scrip in treasury, June 30, 1914.....

\$50,634.09

CONSTRUCTION

The construction charges for the year ending June 30, 1914, were as follows:

Balance cost of second track Truax to Northline, Wis..... \$360,360.80
Account of extension of line Kaiser to Park Falls, Wis..... 208,903.99

Sundry Construction:

Account cost of terminal improvements at
Minneapolis, Minn. \$178,058.43
Balance cost of terminal improvements at
Altoona, Wis. 98,434.10
Balance cost of Earl St. viaduct, St. Paul,
Minn. 34,294.07
Account Nicholas Street viaduct, Omaha, Neb. 11,913.37
Automatic block Signals..... 111,160.72
Permanent bridges (cost of new over old).... 101,758.06
Betterments of roadway and track..... 145,132.33
Sidings and spur tracks..... 76,019.60
Terminal yards 29,725.27
Buildings 41,559.36
Machinery and tools..... 75,076.72
Miscellaneous charges 35,578.14

938,710.17

Equipment:

Equipment acquired (22 locomotives, 1 steel
dining, 2 combination mail and baggage, 6
baggage, 14 steel first class, 5 steel second
class and 15 caboose cars)..... \$1,058,108.45
Improvements to equipment..... 35,849.16

Less equipment retired..... Cr 504,720.89

589,236.72

Total \$2,097,211.68

EXTENSION OF LINE

The line was extended from Kaiser to Park Falls, Wis., a distance of 5.99 miles, and placed in operation April 1, 1914.

SECOND MAIN TRACK

The work on the second track between Truax and Northline, Wis., mentioned in the two previous years' reports, was completed, and the final portion placed in operation on October 30, 1913.

SUNDRY ADDITIONS AND BETTERMENTS

New frame passenger depots were constructed at Woodville and Solon

GENERAL BALANCE SHEET, JUNE 30, 1914

ASSETS

1,683.22

PROPERTY INVESTMENT.

Road and Equipment:

Balance to debit of this account,
June 30, 1913..... \$72,085,442.75
Add sundry construction and equipment
expenditures for the year ending June
30, 1914 2,097,211.68

\$74,182,654.43

Securities:

Securities of proprietary, affiliated and
controlled companies, unpledged.....

210,200.00

Other Investments:

Advances to proprietary, affiliated and
controlled companies for construction,
equipment and betterments..... 97.49
Miscellaneous investments 200,465.69

\$74,593,417.61

WORKING ASSETS.

Cash \$1,016,097.38
C, St. P., M. & O. common stock on hand
C, St. P., M. & O. preferred stock on hand
Consolidated mortgage bond scrip due from
Central Trust Company..... 634.09
S. S. M. & S-W. Ry. Co. first mortgage
bonds on hand 50,000.00
Minneapolis Eastern Ry. First Mortgage
bonds on hand 125,000.00
Minnesota Transfer Ry. first mortgage
bonds on hand 191,000.00
Bills receivable 1,855.83
Traffic and car service balances due from
other companies 184,322.40
Net balance due from agents and con-
ductors (including working funds)..... 448,434.39
Miscellaneous accounts receivable..... 528,368.20
Materials and supplies 1,389,931.64
Other working assets 6,223.90

8,172,996.13

DEFERRED DEBIT ITEMS.

Advances \$6,008.32
Other deferred debit items..... 618,789.05

624,797.37

\$83,391,211.11

LIABILITIES

Miles

CAPITAL STOCK.

Common stock and scrip outstanding..... \$18,559,086.69
Preferred stock and scrip outstanding..... 11,259,911.63

\$29,818,998.32

Common stock and scrip owned by the
company \$2,844,206.64
Preferred stock and scrip owned by the
company 1,386,921.66

4,231,128.30

\$34,050,126.62

MORTGAGE, BONDED AND SECURED DEBT.

Bonds outstanding \$39,337,000.00
Bonds and scrip owned by the company... 50,634.09

39,387,634.09

WORKING LIABILITIES.

Traffic and car service balances due to
other companies \$312,969.53
Audited vouchers and wages unpaid..... 1,388,526.22
Miscellaneous accounts payable 130,487.35
Matured interest, dividends and rents unpaid
Other working liabilities 3,914.16

1,938,667.26

ACCRUED LIABILITIES, NOT DUE.

Unmatured interest and dividends..... \$1,420,750.82
Taxes accrued 611,056.80

2,031,807.62

DEFERRED CREDIT ITEMS.

Reserve for accrued depreciation..... \$1,574,172.82
Unextinguished premium on funded debt sold
Other deferred credit items..... 195,902.32

1,885,549.24

PROFIT AND LOSS.....

4,097,426.28

\$83,391,211.11

Spring, Wis., and a brick passenger depot at Wayne, Neb., replacing structures now used exclusively as freight houses. Passenger and freight depots were constructed at Nicols and Wilder, Minn., to replace similar structures destroyed by fire.

Wooden water tanks on steel towers were erected at Altoona, Wis., Adrian, Minn., and Craig and Omaha, Neb., those at Adrian and Craig replacing tanks worn out.

The improvements in the enginehouse facilities at Altoona, Wis., mentioned in the previous report were completed. Work is in progress on an 8-stall brick enginehouse, water tank, sand house, cinder pit and turntable at Sioux Falls, S. D. A 4-stall brick enginehouse was built at Duluth, Minn., to replace one destroyed by fire, and the old enginehouse at Minneapolis was abandoned and torn down.

There was constructed at Park Falls, Wis., a frame passenger and freight depot, coal house, water tank, pump house, brick-lined enginehouse, wye and cinder pit.

An electric interlocking plant, joint with the C. & N. W. Ry., was constructed at Wyeville, Wis.

The viaduct at Earl Street, St. Paul, mentioned in the last report, has been completed and work has been started on a viaduct at Nicholas Street, Omaha, Neb., joint with Missouri Pacific and Omaha Bridge and Terminal Railway Companies, which will be completed in the fall of 1914.

The additional yards at Hazel Park and Minneapolis, Minn., mentioned in the previous report, were completed during the year and a 100-ton Howe track scale is now being installed at Hazel Park. The filling has been completed for a new coach yard at Minneapolis. A new yard for the

interchange of traffic between the Eastern and Northern divisions was constructed at Northline, Wis., containing 2.98 miles of track.

The net increase in sidetracks and yards was 12.01 miles.

Electric headlights were applied to 184 locomotives to comply with state regulations.

The length of wooden bridging was decreased 1,514 ft. as follows:

By construction of permanent bridges.....	1,076 feet
By construction of iron pipe culverts.....	49 feet
By construction of concrete pipe culverts.....	343 feet
By filling	46 feet

Total 1,514 feet

LAND DEPARTMENT

The net receipts from all grants were \$834.03.
3,500.06 acres were disposed of, leaving 75,390.50 acres unsold June 30, 1914.

Appended hereto may be found statements, accounts, and statistics relating to the business of the fiscal year, and the condition of the company's affairs on June 30, 1914.

By order of the Board of Directors.

WILLIAM A. GARDNER,
President.

THE FIFTIETH ANNUAL REPORT OF THE DIRECTORS OF THE CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY TO THE STOCKHOLDERS

FOR THE FISCAL YEAR ENDING JUNE 30TH, 1914.

The Directors submit to the Stockholders the following report of the operations of the Company for the year ending June 30, 1914, and of the condition of its property and finances at the close of that year.

The operations for the year show the following results:

Operating Revenues	\$91,782,690.74
Operating Expenses	61,330,061.17
Net Operating Revenue.....	\$30,452,629.57
Net Revenue—Outside Operations.....	260,483.24
Total Net Revenue.....	\$30,713,112.81
Taxes Accrued	4,106,557.41
Operating Income	\$26,606,555.40
Other Income:	
Interest on Bonds.....	\$234,841.80
Dividends on Stocks.....	51,143.00
Interest on Other Securities, Loans and Accounts	2,065,327.68
Rents—Received	402,547.04
Hire of Equipment.....	272,635.87
Miscellaneous	448,605.43
	3,475,100.82
Gross Corporate Income.....	\$30,081,656.22
Deductions:	
Interest Accrued on Funded Debt.....	\$13,254,822.89
Rents—Paid	765,362.80
Miscellaneous	585,184.62
	14,605,370.31
Net Corporate Income.....	\$15,476,285.91

MILES OF TRACK, JUNE 30th, 1914.

Owned solely by this Company:	
Main track	9,578.48
Second main track.....	924.95
Third main track.....	21.72
Fourth main track.....	13.11
Connection tracks	45.13
Yard tracks, sidings and spur tracks.....	3,083.07
	13,666.46
Owned jointly with other Companies:	
Main track	102.90
Second main track.....	5.59
Third main track.....	1.94
Fourth main track.....	1.93
Connection tracks	4.98
Yard tracks, siding and spur tracks.....	165.67
	283.01
Used by this Company under contracts:	
Main track	305.92
Second main track.....	64.81
Third main track.....	1.14
	371.87
Total miles of track.....	14,321.34
Average miles of main track in operation during the year:	
Owned solely	9,279.24 miles
Owned jointly	102.90 "
Used under contracts.....	301.81 "
Total average miles operated.....	9,683.95 miles
The lines of road of this Company are located in the following States:	
Wisconsin	1,805.34 miles
Illinois	415.04 "
Iowa	1,867.17 "
Minnesota	1,233.39 "
North Dakota	379.93 "
South Dakota	1,794.87 "
Missouri	140.27 "
Michigan	179.97 "
Montana	1,051.86 "
Idaho	197.59 "
Washington	615.95 "
Total length of main track owned solely and jointly....	9,681.38 miles

EQUIPMENT.

During the year thirty-three locomotives and two thousand eight hundred and thirty-one cars of various classes have been purchased or built as follows:

33 Locomotives	2732 Box Cars
3 Dining Cars	69 Cinder Dump Cars
10 Postal Cars	2 Pile Drivers
2 Office Cars	1 Track Scale Test Car
10 Mail and Baggage Cars	2 Bridge Derrick Cars

During the year sixteen locomotives and one thousand six hundred and eighty-three cars of various classes were destroyed, by wreck or fire, sold or taken down on account of small capacity, as follows:

16 Locomotives	32 Ore Cars
3 Passenger Cars	32 Refrigerator Cars
1 Dining Car	9 Vegetable Cars
1 Baggage Car	15 Ballast Cars
7 Mail and Express Cars	18 Caboose Cars
1257 Box Cars	15 Cinder Dump Cars
69 Stock Cars	41 Work Train Cars
183 Flat and Coal Cars	

The original cost of the equipment retired has been credited to Property Investment—Road and Equipment.

PROPERTY INVESTMENT—ROAD AND EQUIPMENT.

Equipment	\$2,978,916.21
New Branch Lines and Extensions.....	9,228,615.60
Construction of Second Main Track.....	10,573,229.72
Reducing Grade and Improving Line.....	1,336,633.08
Yard Improvements	762,778.97
Shop Improvements	544,540.79
Other Additions and Betterments.....	9,776,549.35
	\$35,201,263.72
Credit—Property retired or converted.....	766,311.90
Total as shown by detailed statement on page 35 of this report.	\$34,434,951.82

IMPROVEMENTS AUTHORIZED.

EQUIPMENT
Authority has been given for the purchase or building of additional equipment as follows:

5 Locomotives, 10 Passenger Coaches, 16 Sleeping Cars, 1 Dining Car, 4 Parlor Cars, 2 Observation Parlor Cars, 2 Cafe Observation Cars, 2 Passenger and Baggage Cars, and 2 Mail and Baggage Cars.

ADDITIONAL MAIN TRACKS

Construction work has been in active progress during the year on the second main track and grade reduction work on the Chicago and Council Bluffs Division in Iowa, and on the Hastings and Dakota Division. Between October 1st, 1913, and July 1st, 1914, the unfavorable financial conditions caused a suspension of a large part of the work on the Hastings and Dakota Division and a portion of that on the Chicago and Council Bluffs Division in Iowa. Since July 1st, 1914, track laying has been resumed, and it is expected to have the Chicago and Council Bluffs Division in operation before winter between Green Island and Manilla, Iowa, a distance of 270 miles.

On June 30th, 1914, the following new sections of second main track were completed and are now in operation:

CHICAGO AND COUNCIL BLUFFS DIVISION IN IOWA—

Green Island to one mile east of Delmar Junction.....	19.42 miles
West Nation to Elberon.....	80.31 "
Capron to Coon Rapids.....	86.02 "

Total 185.75 miles

HASTINGS AND DAKOTA DIVISION—

Hennepin Ave., Minneapolis, to Hopkins.....	6.17 miles
Cologne to Glencoe.....	18.88 "
Hector to Bird Island.....	8.79 "
Wegdahl to Montevideo.....	5.12 "
Milbank to Aberdeen.....	99.98 "

Total 138.94 miles

AUTOMATIC BLOCK SIGNALS

Authority was given for the installation of automatic block signals on the line between Chicago and Minneapolis, and a portion of the line between

Minneapolis and Aberdeen, also on the line between Chicago and Manilla, Iowa, on the Chicago & Council Bluffs Divisions in Illinois and Iowa. About 60% of this work was completed during the fiscal year. It is expected that the balance will be completed by the close of the calendar year.

The installation of block signals heretofore authorized on the Puget Sound line and as set forth in the annual report of 1913, was completed and placed in operation during the year.

ELIMINATION OF GRADE CROSSINGS

The depression of tracks, for a distance of about three miles along the Hastings and Dakota Division, in the City of Minneapolis, extending from Hiawatha Avenue to Hennepin Avenue, contemplates the elimination of thirty-seven grade crossings. The work is now in progress, and is about 35% completed. It is expected to be entirely completed early in 1916.

The elevation of the tracks along the Bloomingdale Road, in the city of Chicago, a distance of about 2.4 miles, is progressing satisfactorily. When completed it will eliminate thirty-five grade crossings.

Elevation of tracks in the City of Milwaukee is in progress. This work which extends from Kinnickinnick Avenue to Fowler Street, and from Clinton Street to First Avenue, a distance of 1.4 miles, is about 15% completed, and will be continued over a period of two years. When completed, fourteen grade crossings will be eliminated.

The elevation of tracks on the Chicago and Evanston Division, from Montrose Avenue to Howard Avenue, Chicago, the northern city limits, a distance of about 4.4 miles, was begun in February of this year and is now about 15% completed. This work will extend over a period of three years, and will eliminate thirty-six grade crossings.

NEW LINES AND EXTENSIONS

The work on the extension from Crystal Falls to Iron River, Michigan, is practically completed. The main line and connections with the various iron mines have been completed, and are in operation.

The line from Lewistown to Great Falls, Montana, a distance of 137 miles, is practically completed, and will be opened for train service early in September.

Construction of the Choteau Line, extending from Great Falls to Agawam, Montana, a distance of 70 miles, has been temporarily suspended, and will not be completed before next season.

The lines from Hilger to Roy, Montana; from Roy Junction to Winifred, Montana; from Lewistown to Grass Range, Montana, and from Colorado Junction to Cliff Junction, Montana, have been completed and are in operation.

The line into Spokane, Washington, has been completed, and is in operation, this company having entire ownership of the line from Plummer, Idaho, to Bell, Washington, a distance of 21 miles, and joint use with Oregon-Washington Railroad & Navigation Co. of that Company's line from Bell to Spokane, Washington. In the City of Spokane, the terminal tracks and buildings and freight house are completed and in operation.

Work on the Newwood River Line, a logging road extending 17 miles northwesterly from Merrill, Wisconsin, was commenced in October, 1913. On June 30th, 1914, the grading was completed for about 8 miles and the track laid for about 4 miles.

TERMINAL YARDS

All of the improvements on the terminals and yards mentioned in last year's report were completed during the past year, and are now in operation.

TUNNELS

The construction of the Snoqualmie Tunnel, at the summit of the Cascade Mountains, is nearing completion, the work being carried on from both portals. At the present rate of progress the tunnel should be open for traffic shortly after the close of the calendar year. When completed, the line will be shortened 3.6 miles, practically all trouble caused by snow slides on the Coast Division will be avoided, and heavy grades will be eliminated.

ELECTRIFICATION

The work on the electrification of the Puget Sound Line was started in April, 1914, and on June 30th, 1914, thirty miles of poles were set and ready for wiring. It is expected that the work of stringing the wires from Three Forks to Deer Lodge will be completed by July 1st, 1915.

RESERVE FOR ACCRUED DEPRECIATION.

At the close of the fiscal year, ending June 30th, 1913, there was at the credit of Reserve for Accrued Depreciation the sum of \$5,649,820.07.

A certain percentage of the total cost of equipment, aggregating \$961,233.64, has been credited to this Reserve for accrued depreciation of locomotives, passenger train cars, freight train cars and work train cars.

There has been charged to this Reserve an amount of \$212,263.81, representing the accrued depreciation, previously credited, on locomotives and cars destroyed, sold or taken down.

The balance of this Reserve, June 30th, 1914, as shown on page 22, is \$6,398,789.90, which represents the estimated depreciation of rolling stock subsequent to June 30th, 1907.

FUNDED DEBT.

At the close of the last fiscal year the Funded Debt of the Company was \$455,849,966.30.

It has been increased during this fiscal year by \$154,489,500.00 General and Refunding Mortgage Bonds, issued in exchange for a like amount of Chicago, Milwaukee & Puget Sound Railway Company 4% Bonds, and by the issue of the following bonds for the acquisition of additional lines of railway and for additions and improvements to property: \$16,424,000.00 General and Refunding Mortgage Bonds; \$8,138,988.36 Chicago, Milwaukee & Puget Sound Ry. Co. 4% Bonds; \$1,149,200.00 Convertible 4½% Gold Bonds; and \$5,319,000.00 Twenty-five Year 4% Gold Bonds.

It has been decreased during this fiscal year by \$154,489,500.00 Chicago, Milwaukee & Puget Sound Railway Co. 4% Bonds exchanged for a like amount of General and Refunding Mortgage Bonds.

The amount of bonds at the close of the year is \$486,881,154.66, of which \$153,572,500.00 are in the Treasury of the Company and \$333,308,654.66 are outstanding.

TREASURY BONDS.

At the close of the last fiscal year the amount of the Company's bonds in its treasury was \$156,295,211.64.

This has been increased during the year as follows:

General and Refunding Mortgage bonds issued in exchange for a like amount of Chicago, Milwaukee & Puget Sound Ry. Co. 4 per cent bonds.....	\$154,489,500.00
Bonds issued for acquisition of additional lines of railway and for additions and improvements to property as follows:	
General and Refunding Mortgage bonds.....	\$16,424,000.00
Chicago, Milwaukee & Puget Sound Ry. Company 4 per cent bonds.....	8,138,988.36
Convertible Gold 4½ per cent bonds.....	1,149,200.00
Total increase	\$180,201,688.36

It has been decreased as follows:

Chicago, Milwaukee & Puget Sound Ry. Company 4 per cent bonds exchanged for a like amount of General and Refunding Mortgage Bonds.....	\$154,489,500.00
General and Refunding Mortgage 4½% bonds sold.....	17,500,000.00
General Mortgage 4½ per cent bonds sold.....	9,741,000.00
Convertible Gold 4½ per cent bonds sold.....	1,193,900.00

Total decrease

Net decrease

At the close of this fiscal year, June 30th, 1914, bonds in the treasury amount to \$153,572,500.00 as follows:

General and Refunding Mortgage.....	\$153,413,500.00
General Mortgage 4 per cent.....	159,000.00
	\$153,572,500.00

OPERATING REVENUES.

The Operating Revenues for the year were \$91,782,690.74—a decrease of \$2,301,363.95 compared with the previous year.

The revenue from freight traffic was \$65,266,420.18—71.11% of total revenue—a decrease of \$2,697,740.92 or 3.97%.

The number of tons of freight carried was 33,007,277—a decrease of 1,798,214 tons, or 5.17%.

The following classes of commodities show a decrease compared with the previous year: Products of Agriculture, 128,881 tons; Products of Animals, 6,940 tons; Products of Mines, 812,650 tons; Products of Forests, 148,321 tons, and Manufactures, 739,048 tons. There was an increase in Commodities Not Specified of 37,626 tons.

The number of tons of all agricultural products carried during the year was 7,162,250 tons—a decrease compared with the previous year of 1.77%. Agricultural products comprised 21.70% of the total tonnage carried, compared with 20.95% of the total tonnage of last year.

The number of tons of commodities other than agricultural products carried during the year was 25,845,027 tons—a decrease compared with the previous year of 1,669,333 tons, or 6.07%—the per cent of the total being 78.30% against 79.05% last year.

The number of tons of revenue freight carried one mile was 8,079,689,505—a decrease of 490,371,906, or 5.72%. The revenue per ton per mile was .8078 cent—an increase of .0148 cent, or 1.87%. The average miles each ton of revenue freight was carried was 244.79 miles—a decrease of 1.44 miles, or .58%.

The number of tons of revenue freight carried per loaded car was 16,498, against 16,776 last year—a decrease of 1.66%. The number of tons of revenue freight per freight and mixed train mile was 379.78, against 356.95 last year—an increase of 6.40%. The revenue from freight per freight and mixed train mile was \$3.0678, as against \$2.8308 last year—an increase of 8.37%.

The revenue from passenger traffic during the year was \$18,961,224.58—20.66% of the total revenue—an increase of \$504,089.07 compared with the previous year, or 2.73%.

The number of passengers carried was 16,426,016, an increase of 302,541 or 1.88%. The number of passengers carried one mile was 912,375,815—an increase of 50,146,132, or 5.82%.

The revenue per passenger per mile was 2.078 cents—a decrease of .063 cent, or 2.94%. The average miles each passenger was carried was 55.54 miles—an increase of 2.06 miles, or 3.85%.

OPERATING EXPENSES.

The Operating Expenses for the year were \$61,330,061.17, a decrease of \$1,553,906.43 compared with the previous year.

The expenses of Maintenance of Way and Structures were \$10,704,519.01; Maintenance of Equipment, \$13,112,977.98; Traffic Expenses, \$1,799,609.65; Transportation Expenses, \$33,960,581.52; and General Expenses, \$1,752,373.01.

There was an increase in Maintenance of Way and Structures of \$55,733.95 and in General Expenses of \$349,361.09.

There was a decrease in Maintenance of Equipment of \$759,007.49, in Traffic Expenses of \$94,733.49 and in Transportation Expenses of \$1,105,260.49.

During the year 43 steel bridges, aggregating 4,009 feet in length and 6 masonry bridges, aggregating 676 feet in length, were built—replacing 3,430 feet of wooden bridges, 1,013 feet of iron bridges and 242 feet of embankment; and 13,568 feet of wooden culverts were replaced with iron and concrete pipe. About 3.9 miles of pile bridges were filled with earth 90 bridges having been completely filled and 70 reduced in length by filling.

SUBSIDIARY COMPANIES.

The operations for the fiscal year ending June 30th, 1914, of the Subsidiary Companies named below—all of the Capital Stock of which is owned by this Company—show the following results:

These Companies are operated independently and their Revenues and Expenses are not included in the statement of the Chicago, Milwaukee & St. Paul Railway Company, shown on page 7 of this report.

TACOMA EASTERN RAILROAD COMPANY.

Operating Revenues	\$581,265.64
Operating Expenses	442,703.72
Net Operating Revenue.....	\$138,561.92
Taxes Accrued	39,473.10
Operating Income	\$99,088.82
Rents Received	\$18,174.02
Hire of Equipment.....	27,858.13
	46,032.15
Gross Corporate Income.....	\$145,120.97
DEDUCTIONS:	
Interest Accrued on Funded Debt.....	\$44,200.00
Interest paid Chicago, Milwaukee & St. Paul Ry. Company	109,363.48
Rents Paid	1,218.75
Miscellaneous	1,717.22
	156,499.45
Net Corporate Deficit.....	\$11,378.48

BELLINGHAM & NORTHERN RAILWAY COMPANY.

Operating Revenues	\$331,205.22	
Operating Expenses	196,009.44	
Net Operating Revenue	\$135,195.78	
Taxes Accrued	25,880.75	
Operating Income	\$109,315.03	
Rents Received	3,297.90	
Gross Corporate Income	\$112,612.93	
DEDUCTIONS:		
Interest Accrued on Funded Debt	\$30,303.87	
Sinking Fund	18,220.00	
Hire of Equipment	32.97	
Rents Paid	565.00	
Miscellaneous	780.00	49,901.84
Net Corporate Surplus		\$62,711.09

GALLATIN VALLEY RAILWAY COMPANY.

Operating Revenues	\$107,376.64	
Operating Expenses	83,795.10	
Net Operating Revenue	\$23,581.54	
Outside Operations—Net	1,812.32	
Taxes Accrued	\$25,393.86	
	9,922.47	
Gross Corporate Income	\$15,471.39	
DEDUCTIONS:		
Interest paid Chicago, Milwaukee & St. Paul Ry. Company	\$54,621.41	
Hire of Equipment	10,439.11	65,060.52
Net Corporate Deficit		\$49,589.13

MILWAUKEE TERMINAL RAILWAY COMPANY.

Operating Revenues	\$92,733.28	
Operating Expenses	86,699.36	
Net Operating Revenue	\$6,033.92	
Taxes Accrued	8,956.22	
Operating Deficit	\$2,922.30	
Rents Received	25.00	
Gross Corporate Deficit	\$2,897.30	
DEDUCTIONS:		
Interest paid Chicago, Milwaukee & St. Paul Ry. Company	\$33,064.36	
Rents Paid	1,040.56	
Hire of Equipment	210.00	34,314.92
Net Corporate Deficit		\$37,212.22

BIG BLACKFOOT RAILWAY COMPANY.

Operating Revenues	\$63,211.31	
Operating Expenses	43,380.85	
Net Operating Revenue	\$19,830.46	
Taxes Accrued	1,525.00	
Operating Income	\$18,305.46	
Income from Non-Operating Property	50.00	
Gross Corporate Income	\$18,355.46	
DEDUCTIONS:		
Interest paid Chicago, Milwaukee & St. Paul Ry. Company	\$20,166.24	
Hire of Equipment	14,867.84	
Rents Paid	5,306.54	40,340.62
Net Corporate Deficit		\$21,985.16

IDAHO & WASHINGTON NORTHERN RAILROAD.

During the year, this Company acquired approximately 83% of the capital stock and all of the outstanding bonds and notes of the Idaho & Washington Northern Railroad, with the exception of sixty thousand dollars of first mortgage bonds, in exchange for its four per cent bonds. The railroad of that company extends from a connection with this Company's Coeur d'Alene branch at McGuire, Idaho, to Metaline Falls, Washington, a distance of 106 miles, with a branch extending from Coleman to Clagstone Junction, a distance of about 7 miles. Its equipment consists of 13 locomotives, 9 passenger cars and 448 freight cars. Its railroad shops and equipment were built during the years 1907, 1908 and 1909, and are all of modern construction.

For details of operation, reference is made to the statements of the General Auditor, appended hereto.
By order of the Board of Directors.
August, 1914.

A. J. EARLING, President.

GENERAL BALANCE SHEET.

ASSETS—JUNE 30TH, 1914.

PROPERTY INVESTMENT:		
Road and Equipment		\$553,243,345.05
Reserve for Accrued Depreciation—Cr.		6,398,789.90
		\$546,844,555.15
Securities:		
Securities of Controlled Companies—		
Unpledged:		
Stocks	\$9,033,502.34	
Funded Debt	5,480,000.00	14,513,502.34
Other Investments:		
Advances to Controlled Companies for Construction, Equipment and Betterments	\$31,971,333.27	
Miscellaneous Investments:		
Physical Property	482,833.18	
Investment Securities—Unpledged	51,082.05	32,505,248.50
TOTAL CAPITAL ASSETS		\$593,863,305.99
WORKING ASSETS:		
Cash	\$16,745,787.97	
Traffic and Car-Service Balances	456,649.11	
Due from Agents and Conductors	2,036,091.85	
Miscellaneous Accounts Receivable	3,071,118.13	
Materials and Supplies	7,723,038.00	
Other Working Assets	360,098.18	30,392,783.24
ACCRUED INCOME NOT DUE:		
Unmatured Interest		282,328.67
DEFERRED DEBIT ITEMS:		
Working Funds	\$217,844.37	
Special Deposits	55,258.98	
Taxes Paid applicable to period subsequent to June 30th, 1914	857,181.94	
Cash and Securities in Sinking Funds	412,089.02	
Securities in Insurance Fund	2,806,600.00	
Other Deferred Debit Items	1,875,599.92	6,224,574.23
		\$630,762,992.13

GENERAL BALANCE SHEET.

LIABILITIES—JUNE 30TH, 1914.

CAPITAL STOCK:		
Common Stock—		
In Hands of Public	\$116,850,100.00	
Held by Company	5,300.00	\$116,855,400.00
Preferred Stock—		
In Hands of Public	\$115,845,800.00	
Held by Company	429,100.00	116,274,900.00
Premiums Realized on Capital Stock	36,183.87	
Total Capital Stock		\$233,166,483.87
FUNDED DEBT:		
Mortgage Bonds—		
In Hands of Public	\$199,784,000.00	
Held by Company	155,551,500.00	\$355,335,500.00
Debenture Bonds—		
In Hands of Public	\$131,443,454.66	
Held by Company	102,200.00	131,545,654.66
Total Funded Debt		\$486,881,154.66
Total Capital Stock and Funded Debt		\$720,047,638.53
Less Stock and Bonds unsold, held in the Treasury of the Company		153,915,500.00
TOTAL CAPITAL LIABILITIES		\$566,132,138.53
WORKING LIABILITIES:		
Bills Payable	\$5,030,280.20	
Traffic and Car-Service Balances	516,327.13	
Pay Rolls and Vouchers	7,592,102.61	
Miscellaneous Accounts Payable	340,973.72	
Unclaimed Dividends	4,415.50	
Interest Coupons not Presented	115,994.14	
Matured Funded Debt	5,000.00	
Other Working Liabilities	615,955.47	14,221,048.77
ACCRUED LIABILITIES NOT DUE:		
Interest Accrued on Funded Debt	\$5,001,099.23	
French Government Tax—European Loan of 1910	928,459.10	5,929,558.33
DEFERRED CREDIT ITEMS:		
Insurance Department Fund—Reserve	\$2,771,116.58	
Other Deferred Credit Items	417,964.72	3,189,081.30
APPROPRIATED SURPLUS:		
Reserves from Income or Surplus:		
Invested in Sinking Funds		430,269.02
		\$589,902,095.95
PROFIT AND LOSS—BALANCE:		
Surplus		40,860,896.18
		\$630,762,992.13